The Builder.

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THE roads through London require assistance. Within a short time very great advances have been made in the character of our civic buildings: the leading thoroughfares and defiles have been adorned with many edifices of a style and pretensions hitherto unknown. The Exchange was the first grand innovation; then the Coal-Exchange; the various palatial insurance offices; the Hall of Commerce; then club chambers: a great extent of houses, lateral upon old streets and lanes, has been demolished, and renewed in a material and fashion, at all events, superior: still, with few exceptions, the causeways are narrow and tortuous as before.

Cannon-street is an exception. This is really an ornament to the City; and offers for commerce an opening without which the vital regions of the metropolis must, in the plethora of trade and population, have stagnated, if not ceased to pulsate.

Moorgate-street, on the other side, added an artery to the constricted system of circulation. These two improvements emanated from the civic functionaries! All honour to them for municipal care and forethought. The half million yearly, reported to be within scope of their rental, has not been wholly misapplied; nor has the change wrought in the capital, so far as such alterations were carried out, been subversive of their interests: on the contrary, the returns produced by the remodelled districts have repaid the enterprise and spirit by which they were dictated.

By one, however, who looks prospectively at that which has been done, and that which yet remains to be effected, there is a danger to be apprehended: it is, that the narrow ways of ancient London, though margined by palaces, may hereafter, when amendments shall be further carried out, become comparatively mean as contrasted with the routes which will certainly be constructed.

As the limits of the city are destined to comprehend the whole circuit of the great metropolis, so the lines of communication must not only be multiplied, but enlarged. It will be impossible to change the width of the central streets, already finished and embellished with noble structures, but new lines must be opened. Every other capital has its grand causeway,—Paris, her Boulevards; Rome, Il Corso; Naples, the Gran' Strada di Toledo; Dublin, Sackville-street; and New York, the imposing Broadway. London has—what? The Strand, and Holborn and Oxford-street,—all good as central routes for their several quarters; but what are they for the Queen of Cities? Look at the strictures, the straits, the narrows and rapids,—no, not rapids, but too often, dead locks, of the bars and crossings in so vast a torrent of rolling life!

There ought to be in London a great central duct, to which all others should be tributary and subordinate,—a "Via Condotti," a "Corso," or a "Via Sacra." This line should not only be direct, but intermediate between Holborn and the Strand: *it should also be level*, and the line pointed out seems to favour this end most to be desired; for the levels between Leicester-square and Paternoster-row, as laid down on the sewers' map, range between 46 and 56 feet, save only in one point, and that is at Farringdon-street hollow, where the gauge is just 26 feet above tidal level.

Hitherto, all wains approaching the City had to descend 30 feet and to rise again to the same elevation. The horrors of Snow-hill are too well known to need observation. Ludgate-hill is not so penal to our draft-horses, yet it is on a steep incline and heavy pull. All this might be obviated by a viaduct across Farringdon-street.

This road should commence from the City (in ancient times all our grand conceptions had thence their source and origin) in a direct line westward: it should open out from the statue of Sir Robert Peel 100 feet wide, slick through Paternoster-row. Leave the valuable shops in St. Paul's-churchyard if you like, that is, if they are too costly to pay the tribute to our great architect, Sir Christopher Wren, now deferred 200 years! Cut on thence, with the same *latitude of design*, straight to Gough-street,—thence to Carey-street (across Chancery-lane),—thence, diagonally, through blocks of wretched and dingy buildings, bounded by Vere-street, Wild-street, Stanhope-street, to Hart-street, and thence across St. Martin's-lane, between New-street and Long-acre; so crossing St. Martin's-lane and issuing into Leicester-square (north side) without interfering with Cranbourne-new-street, except at the point of junction.

Thus the present business streets would be spared, and the slums, only, opened out to fresh air and daylight. The noble civic esplanade would not only confer a value on that which, in its present condition, is a pest and a disgrace, but would enhance the worth of the vicinal streets, which are always sure to rise in estimation as the neighbourhood becomes respectable.

In so extensive a clearance, a great displacement of the working classes must demand new locations: it would be easy, by properly digested plans, to meet that requirement, so as not to drive them to quarters too remote from their avocations. Ranges of new and lofty buildings, with noble and imposing shops below, might be adopted, as in Victoria-street, to the improved health and increased comfort of working men and their families; and the traverse streets might also be arranged upon a similar plan—suitable not to M.P.'s and rich bachelors, but for honest workmen, their wives and children.

A main street worthy of the metropolis ought to be 100 feet wide. It is needless to refer to instances to prove that the carrying out of a plan which has been well conceived, with spirit, must always pay: the streets and squares of Belgravia prove it, and Mr. Jackson's *ultra latitudinarian* new roads at Brompton may also be cited in evidence of the fact, long since prognosticated, that "the liberal soul shall be made fat." A smaller site is always accepted as more valuable in an open position than a larger in a close one.

The long-neglected and slumbering condition of the civic estate in continuation from Farringdon-street to Islington,—the neutral and rude waste of that most valuable plot of ground on which the prison formerly stood in Farringdon-street, as well as of the other vacant site of the City Compter (next Christ's Hospital),—the neglected and *disgusting aspect of the river slums*, besides smaller blemishes everywhere, reproach the authorities with sluggishness.

Were there but one mind with one authority amongst them, and the rental no more nor less than it has been for years past; then, as cunning capitalists, calculating upon only the profits of improved value in judicious outlay, the City would not have been left as it has been, mapped out and ammorcelled in its *pristine complexity*:—no, the crooked ways would have been made straight, and the rough places plain.

What Napoleon has done for Paris, at an enormous outlay, might be effected here, with greater facility, as well as with less violence to vested interests.

It is but lately that works of an extensive nature,—such as the great plan of sewage, and the oft-mooted construction of quay-walls for the river,—have been received as public problems: the admission of the idea is a great advance towards the consummation of the design. Of all these the *Builder* has often treated. Engineering and architectural taste and skill are notably not deficient in the land. All Europe, as all colonies and foreign states, bears evidence of their achievements. Now, in the shade of our universal peace, the talent of Britons will, it is hoped, be turned towards the transformation and embellishment of the world's great commercial metropolis. Abroad, *the vista* has been always valued, whether in city-ways, parks, or avenues. Look at the Champs Elysées, Versailles, &c. HERE we obtruncate every open route: Pall Mall! Whitehall!! and Lincoln's-inn-fields, wholly *built in!!!*—all spoiled in the cooking.

The great central thoroughfare, to be in keeping with the Queen of Cities, should be in no part less than 100 feet wide: it would infallibly extend (in time); retrograde from Long-acre across Leicester-square, and take up the line of Piccadilly; thus dividing the whole area of trade, and liberating the constricted ducts of Holborn and the Strand. Whilst in progress, all the proximate quarters would keep pace with the enhanced value and merit of the "Via Sacra" here sketched out.

DESIGNS FOR CAVALRY BARRACKS.

THE rooms at Burlington House being required by the University of London, the exhibition of the Designs for Barracks had to be closed, as we apprehended in our last notice; and we believe the drawings by this time will have been stowed away in the attics of the building. The claims of unsuccessful competitors as to their designs—to which we have given expression—probably will in some manner be regarded. Still—however right on the part of Government, not to omit such consideration for the competitors in question—we who have preferred their claims, must not allow it to be supposed that any compensation will accrue to them, by the mere possession of their drawings.

For the competitor the drawings can be comparatively of little use—even to himself, after a competition. We have tried to show how some general advantage might be gained by keeping works longer together, and arranged for easy reference and comparison; and, believing that such course would afford the main advantage that any individual should calculate upon, under existing circumstances, in competitions, we continue to regret that the last opportunity has not been turned to adequate account.

Considering the heavy personal interests,—it is seen to be one of the difficult points in the competitions question, that at the close of the contest, and then alone, are the best materials gathered, from which to initiate the actual building design. To cast back all such valuable contributions, or to keep them huddled up where they cannot be inspected, may be consistent with justice to individuals—though little serviceable to them; but, neither course is consistent with that progress which should be a common aim. We are therefore, on due consideration, strongly disposed to urge, that the principle of remunerating unsuccessful competitors, and making their ideas serviceable, is generally the correct one. Limiting the number of competitors, however, is objectionable,—if new ideas are the object.

In the position of the question of barrack accommodation, as set forth in the Committee's report, the chief point of difference between infantry and cavalry barracks affecting the disposition of *plan*, appears to be involved with the requisite of the riding-school. This is to be so placed, "that every horse may be

brought from his stable into the riding-school without going into the open air." Therefore, whilst in the infantry barracks, the competitors have variously chosen to make the parade ground, or a covered drill-court, or the stores, or the canteen, or the commanding-officer's quarters, what we may call the *focus* of the plan; in the fresh case, each of these presumed centres of distribution is almost of necessity ceded to the riding-school; and there are extremely few of the twenty-five sets of drawings which endeavour to group the quarters round the parade-ground.

The committee "see no objection to the practice of allowing the men to live in rooms over the stables, provided that care be taken in the construction of the ceilings of the stables, and to prevent the foul air from entering the men's rooms through the windows." Nearly all the competitors have therefore kept to this arrangement,—which is certainly a very convenient one. The point, however, still deserves consideration: objections will not fail to be expressed to the arrangement,—allowing that by proper contrivance and attention, noxious effects might be reduced to a *minimum*. The stalls, it may be useful to notice, in their dimensions are directed to be 9 feet by 5 feet 8 inches. A width of 6 feet had been named in the case of the officers' stables to the infantry barracks. The horses, as at present, were to stand with their heads to the external walls, down each side of a 12-feet passage.

The number of horses to be provided for, on the usual scale of cavalry regiments, is 271 troop-horses and 50 officers' horses,—the latter in separate stables. The number of men, exclusive of officers and non-commissioned officers, is set down as 334. There are 27 officers, and the same number of non-commissioned officers,—the latter consisting of nine staff-sergeants, and eighteen sergeants attached to the "troops." Of the "troops," or divisions of cavalry regiments, there are usually six; and besides the regimental sergeant-major, these require (making up the eighteen) six troop sergeant-majors (answering to pay-sergeants of infantry), and twelve troop-sergeants. Thus, in some respects, the scale of accommodation is much less than in the case of infantry barracks, whilst a few additional features are required in the case of cavalry beyond what may have been mentioned. Such are the horse infirmary (also to be made capable of access under cover); and the forges, saddlers' workshop, granary, hay and straw barn, and foul litter-sheds. The other arrangements are the same for cavalry as for infantry, in proportion to the number of men.

Twenty-five designs for cavalry barracks having been sent in, and these being classified as we stated in the case of the designs for infantry barracks; the committee met on the 11th of December, and on the 14th, selected five designs, "as worthy of further consideration."

The list, as we find it, gives the names,—"Centaur" (Mr. Morgan's design); "Brevitas" (Mr. Young's); "Paritur Pax Bello" (Messrs. T. H. and M. D. Wyatt); "Y-Fynd Dwy-y-Fydd," and "Balaclava." On the 15th they made selection, as the names now stand. Messrs. Hunt and Stephenson's estimates, with 10 per cent. addition, were as under:—

No. 1. (Messrs. Wyatt)	£118,137
No. 2. (Mr. Morgan).....	133,159
No. 3. (Mr. Young)	123,337

We may observe, that the estimates do not appear to have been "detailed estimates," in the ordinary sense, though they were, doubtless, made with care. We hear, however, that those for the infantry barracks are not satisfactory to some parties.

In a former number, we printed a description of the design of Messrs. Wyatt,—but we may remind our readers that in the plan, the men's quarters and stables form three sides of a quadrangle; in the centre of which is the riding-school building—along with dining kitchens, one for each troop, and together with library and reading-room, all reached by three covered ways from the quarters; that the horse infirmary stands at the back, and is reached also by a covered way; and that the parade is in front of the quadrangle just referred to, and is placed endwise, flanked by the officers' quarters on one side, and the chapel-school, canteen, hospital, and sergeants' quarters on the other. We may also add, with reference to the stables, that the troops are separated by archways through; and that from these last, the stables are entered, the doors thus being one at each end of the compartment for a troop. Each troop, however, has two stables, but communicating with each other. There are staircases to the quarters above, for each company: they are placed two next each of the three archways, the quarters having external galleries at the back. The foul litter-sheds are under these galleries. The dormitories open out directly from the galleries, as also do the lavatories. Each troop has four dormitories; the two sergeants' rooms being in the middle of the four,—thus, inspection as regards two of the rooms, would not approach to what most of the witnesses considered indispensable. We notice points such as this last, as it were interrogatively, and with reference to principles of arrangement,—what principles have been adopted as the basis of selection;—or whether any have been considered and set aside;—or is it left to us to show that before any *model* building can be commenced, the *desiderata* in such buildings must be assessed and placed in the order of their logical sequence? We have before expressed fear that the report, even by its precision in some things, has fettered invention, the real object being merely to afford information upon the military points. Here, again we touch upon a matter of great importance in the competitions question—the nature and limits of the "instructions." Again, if there are objections to dormitories lighted from the sides, they would appear to hold against the present design. The beds, thirteen in each room, are placed round the room; and what is in the centre marked with the letter T, it is due to the designers—after what was said in a letter in our pages—to say, appears to be a table, and not what was supposed. The plan under notice has the roadway all round, next the external wall, a feature which it might be well to adopt in all cases. It is here shown to be applicable for ball-practice. The cricket-ground, cesspools, and gas-works are to be provided externally. Were it shown to us that ready access to the parade-ground need be not a primary feature, or that the quarters need not necessarily look on to the parade, we should regard the arrangement of this plan as highly successful; for, as its authors say, by it every trooper is enabled to go from his bed-room to his stable, riding-school, dining-room, and reading-room under cover, whilst every troop-horse may be taken from its stable to the riding-school and the horse-infirmary under cover, and may be also cleaned and shod under cover.

Mr. Morgan's plan is even more successful in the points just mentioned, though it appears to be defective in some other particulars. The main group of buildings has a corridor of communication—15 feet wide and 14 feet high—running the whole length,—from the horse-infirmary at one end, to the officers' stables at the other. The riding-school is connected with it in the middle of its length; and ranges of buildings open out from it, four on each side,—for the six troops, and stores. Also leading from the same corridor, and intermediate to the quarters, are two smaller blocks of building, containing staircases, litter-sheds, and conveniences, and terminated in each case by a ventilating shaft. The official buildings form a front range of the same group next the parade; and, with the remainder of the barrack buildings, that part of the plan closely resembles the same architect's design for infantry barracks. Thus, it will be observed, the principal part of the plan is an arrangement of buildings enclosing six courts. Of these, the middle court, at the rear of the riding-school, is an exercising court, with a covered ride around it. At the front, the two courts outside, it would seem, would have to be crossed to get to the stores; and the entrances, we fear, would be found inconvenient. Ten feet, in most cases, may be wide enough for a cart-way; but is scarcely so, considering the oblique course which would have to be taken, according to the plan. It also seems to us that in planning entrances to stables, every turn that the horse would have to make is a defect. The dormitories (in this case also over the stables) are arranged on a principle generally resembling that of the design for infantry barracks,—but, there are separate dining-rooms, viz. one dining-room over the horse-infirmary and one over the officers' quarters,—three kitchens being attached to each dining-room. Grouping the quarters and stores round courts of their own, in one view, is better than another arrangement,—having regard to the distribution of the stores, and the opportunity thus afforded to the private of passing from one part of the barrack to another in undress. Mr. Morgan's design is also put forward as well planned for the duties of an inspecting officer, who could walk through all the stables and barrack-rooms, and "arrive at the point at which he started." But that which appears most to require notice is the arrangement of contrivances for effecting ventilation. In the dormitories, the arrangement contemplates the admission of fresh air by the windows, which are at the top of the room, with perforated glass and regulating swing casements; and from the fire-clay stoves, which project, and have a warming-chamber communicating with the open air. The escape would be at the ceiling. In the stables there is a fresh-air flue between each stall,—size, 14 inches by 14 inches,—admitting the air over the level of the horses' heads, with balance-valve. The provision for the escape is by flues 14 inches by 9 inches, from the ceiling, and passing up the walls into the roof; also by flues, 9 inches by 9 inches, opening immediately over the mangers; by others, in the iron columns, for the removal of products of combustion from the gas-burners; and, on both sides, by the windows, which are hung on centres. To the windows externally, and forming an additional covered way all round, is an overhanging penthouse roof, which might divert effluvia from the dormitories above; and, constructed of non-conducting materials, would promote equable temperature. The stables of each troop are not sub-divided; and generally, as in the barrack-room, large spaces are advisedly chosen with regard to ventilation. The two extracting-shafts already mentioned are proposed to be heated by gas-jets. The whole plan is put forth as devised so as to gain as much natural or spontaneous warming and ventilation as possible,—by extension of the buildings to the sun and air, and by avoidance of confined spaces. Is this principle, however, fully carried out in the quarters of some of the troops? "The rooms," says Mr. Morgan, "also present their length to the action of the sun and air,—an important feature in the warmth and cheerfulness of a chamber," and "the windows are planned of moderate size, to avoid large heating or cooling surfaces, but with a proper regard to cheerfulness and health."

An ordinary plaster ceiling and floor, being obviously unsuitable, Messrs. Wyatt proposed girders and joists of rolled iron, with concrete filling, and boarded floors above. Mr. Morgan proposes brick arches. He rejects the common lime-and-hair plastering as too absorbent, and proposes to cover the whole of the brickwork with a thin coating of Portland cement. The paving was to be laid with channelled vitrified bricks in cement, on ten inches of concrete, and the drainage he proposes to be a compound of underground and surface drainage,—gratings 45 feet apart, being fixed to the drain along the heel-posts, and self-acting apparatus supplied with water from the rainpipes and sinks, being provided to flush the drain-pipes.

In Mr. Young's plan, the general principle of distribution appears to be the same as in the design last named; but the quarters are somewhat differently arranged. If we suppose two cruciform blocks of building to be placed side by side thus, ++; and then to be joined horizontally at the head and foot, we shall have gained a general idea of the plan. Of the cruciform portions, each is composed of the quarters of three troops, and the officers' stables,—the latter inside, and connected with the riding-school, which thus is in the centre of the whole group. The horizontal line to be supplied at the foot or front, contains the official buildings and chapel-school, and the other line has in the centre the infirmary stables. Other parts of the general plan do not differ essentially from

Mr. Morgan's arrangement. At the intersection of each cross is an octagonal block of building, containing staircases, and tanks for the supply of water, and having a ventilating shaft in the centre. Corridors of communication run round the octagon,—with archways for carts. With these corridors are connected the covered ways which run along one side of each stable, and across the barrack. Covered ways are provided all round both quadrangles. In the upper floor, a dining-room and kitchen is provided at the commencement of each wing. Out of this leads the 9 feet corridor of the rooms. Mr. Young thinks that a competing architect is perhaps the last person who should furnish an estimate of his own design.

No. 4, with the motto, "Y-Fynd Dwy-y-Fydd," by Mr. H. Prichard, has the quarters arranged in the plan of a large segment of a circle, on the argument that this arrangement combines concentration and convenience of supervision, with economy of construction,—as to the latter in the item of roofs. Officers' quarters form a detached building in the chord of the arc, and at the middle thereof. Behind them, at right angles, and connected with the quarters, is a covered drill-court, and in the same line behind the quarters is the riding-school. The horse-infirmary, wash-house, stores, hospital, and other important buildings, are placed detached, at the back of the ground. The front of the plan is marked as a cricket-ground. The married privates' quarters are attached to one end of the riding-school. Over part of the latter is the chapel-school. In the stables there is a middle wall, and the horses' heads are turned in that direction,—or leaving a gangway next each external wall. The arrangement is turned to account in the dormitories, the fireplace being provided in the middle of the room. Covered ways, back and front, are shown in the chief parts of the plan, but do not communicate with some important buildings. The staircases are external. The dormitories are proposed to be divided by partitions of corrugated iron, double, with a cavity. The same material is used for ceilings. The corridors of the barrack-rooms are to serve as dining-rooms, flap-tables being there proposed. The ground for parade, as shown in the plan, would be limited to the quadrant-shaped spaces between the men's and the officers' quarters; or the "cricket-ground" would have to be gravelled and appropriated.

The fifth design of the five first selected, with the motto "Balaclava," was numbered 24 in the rooms. The parade-ground was shown as laid out in lawns, and it had other features which must be considered as defects,—the covered ways to the riding-school being very round-about from some of the quarters,—the school being towards one corner of the ground; and the rooms of the married privates being shown as opening from the corridors of the privates' quarters. The central position was given to the officers' quarters. The plan was devised on the scale of eight troops.

In No. 6, "Cordon," Mr. Thorold placed the riding-school, with the quarters connected at right angles, but somewhat radiating, so as to be less confined in arrangement than in the case of his design for infantry barracks.

In No. 7, "Con Amore," Mr. Kerr kept to the principle which he followed in his design for infantry barracks. As in that case, the officers' and men's quarters are grouped round the parade-ground, so that the stables have what seems to us the *advantage* of direct entrances at the ends, from the parade or an ample space of covered way, instead of, as in some cases, from an inconvenient passage. The covered way runs along the back of the stables, and communicates with the riding-school,—which occupies a central position, along with the chapel-school, in the line of buildings on the side of the parade opposite the entrance-gate. The troops are, as before, in detached buildings; and the plan is so arranged, by provision of recesses at the ends of the stables, that horses could be turned at the entrance to the covered way with as little obstruction to it as possible. The litter-sheds are across the covered way, separately ventilated. The dining-kitchen in the building of each troop occupies a position between two stables. The accommodation for married privates is on the same principle as in the design for infantry barracks,—the plans generally resembling one another.

There is both care and merit in the design numbered 10, with the motto "Britannia," by the same hand as one of the designs for infantry barracks; and in No. 11, "Adequito," apparently by Mr. H. H. Fulton, the same attention to ventilation and to general construction is shown as in the design which he also had in the collection down stairs. So much labour as he has given to his drawings and specifications, should offer much that would be valuable in barrack-building. We confess to some apprehension as to the possibility that the manuscript matter of the designs was not always read. Another design, which appears to be by the author of a set down stairs (No. 13, with the motto, "In spe," in a horse-shoe), adopts the circular form of plan: it is difficult to see with what reason. There is more of point in the placing the stables and men's quarters away from each other,—whatever may be thought of the principle.

In No. 18, "Pugnamus Vincere," the panopticon principle is boldly adopted, with the riding-school (octagonal) as the centre to the stables and quarters radiating from it. The ablution-rooms are at the ends of the stables, and the married women are provided for in floors over the ablution rooms. In this design lines of rails are proposed to be laid along the stables, and intersecting them, or concentrically with the riding-school; and they communicate with the granary, and other parts of the barrack. The officers' quarters are at the front of the ground, but joined to the men's quarters by a covered drill-ground. No. 22, by Mr. W. R. Farrell, has a general plan of octagonal form, with bastions. No. 27, "Curragh," Mr. J. Constable, like the plan by the same author, for infantry barracks, is also made defensible, having bastions at the angles, and intermediate redans in the long curtain walls. These bastions and redans are the sites of the hospital, suttler's establishment, married soldiers' quarters, wash-house, gas and water works, and stores for coals and forage. The men's quarters and stables are in the centre of the ground; and together with the officers' stables, form two squares, separated by the riding-school. The officers' quarters are at another part of the ground, across the parade.

We did not notice in the collection at Burlington House, a design by M. Hector Horeau, shown by a photograph and description now before us; but the opinions on which it is founded may be worthy of attention in this article. Part of Mr. Thorold's *plan* resembles it, at first sight. With one general plan, the author contemplates a barrack capable of being used with little modification, either for infantry or cavalry. At the outset, he lays down as a principle, that a barrack should be only a durable camp. This would seem to be quite the opposite of what has been acted upon by most of the competitors in the late competition. Amongst other points which he prominently advances, is that of the importance of a plan which may conduce not only to classification of ranks, to facility of superintendence and communication, to economy of construction and working, to sanitary requirements, and to military education; but which also by the very order and simplicity of its arrangement, may produce a constant impression upon the soldier. His plan also recognizes the value of impressions derivable from objects of nature; avenues of trees and grass-plots being introduced with an effect which has been hardly sought for by others. For the men's quarters, he advocates the adoption of rooms or halls of considerable internal height, with partitions half the height,—and this arrangement he believes to recommend itself not only because the contrivances for ventilation required where there are upper stories, are, in his opinion, only expensive and ineffectual palliatives, but because he also thinks his arrangement as contrasted with that of small rooms, is more consistent with convenience and superintendence, as with considerations connected with morality as well as discipline. He also believes that in placing the rooms of the men over the stables, every object to be attained in a barrack, suffers. He proposes a large covered court (which would be the riding-school in the case of a cavalry barrack), measuring 360 feet by 120 feet, out of which open, on each side, the galleries or compartments for the several companies of infantry, or in the case of cavalry regiments, the stables on one side and the dormitories opposite. The covered court or riding-school opens from the grand parade, next which are the officers' quarters; and at the further end of the plan are the chapel-school, and canteen and other buildings, and a large space of ground symmetrically arranged, to be devoted to various amusements. There are roads for the "service," round the plan, lined with trees, and these can be entered by side gates, placed obliquely at the grand entrance, which is recessed, and is in the centre opposite to the covered court. In the residences of the officers, and other principal buildings, effect is not neglected; whilst the men's quarters have somewhat the character of sheds. The design, however, presents many useful hints in the sanitary aspects of the subject, which we cannot further allude to. M. Horeau's photograph, showing on one sheet of paper, the whole of his drawings, affords the hint as to a mode of turning the competition to account. Our correspondent (see the note below) has got hold of the right idea; but *photography* might answer all purposes.

In here terminating our series of notices of an architectural competition, which certainly has been the most remarkable we have been called upon to notice,—we again urge, that it has yet to be turned to account. It has cost us no small amount of labour and time to give the few particulars that we have been able to place in print. It has been simply impossible for us, without neglecting every other object, to do justice to the subject; but in labouring through the mass of material before us, we could not help often feeling a misgiving whether the members of the committee had done as much. It is calculated that 1,100 or 1,200 drawings were sent in, and there were probably twice that number of pages of manuscript.*

LATTICE BRIDGE ON THE ST. GALL AND APPENZELL RAILWAY.

WE are indebted to Mr. Villiers Sankey for particulars of the St. Gall and Appenzell Railway, which was opened on Easter Monday last, and for the details of a very remarkable Lattice Bridge which carries the railway over the Sitter river, given him by Mr. Hartmann, the chief engineer for the line.

The railway has had many difficulties to contend with, inasmuch as St. Gall is the highest town in Europe, being 2,050 feet above the level of the sea. The gradients are therefore necessarily very steep, in general, in order to get up to the level of the town; but what makes the difficulty still greater is the number of cross valleys that interrupt "the even tenor of the way," and necessitate the construction of lofty viaducts to span the deep ravines across which the railway has to be taken at an enormous height above the surface of the ground: several of these are of stone, and three of iron, namely, the one over the Thur, near Wyl; that over the Glatt near Flawyl; and especially that over the Sitter, at about 3 miles distant from St. Gall, which is about 560 feet long, and 200 feet above the water of the river. It is a wrought-iron lattice bridge, supported upon cast piers, which rest upon light stone pedestals, founded upon the solid rock. These stone foundations of the piers are 40 feet high, the cast-iron piers being 161 feet 5 inches high, and at the base 20 feet in the direction of the

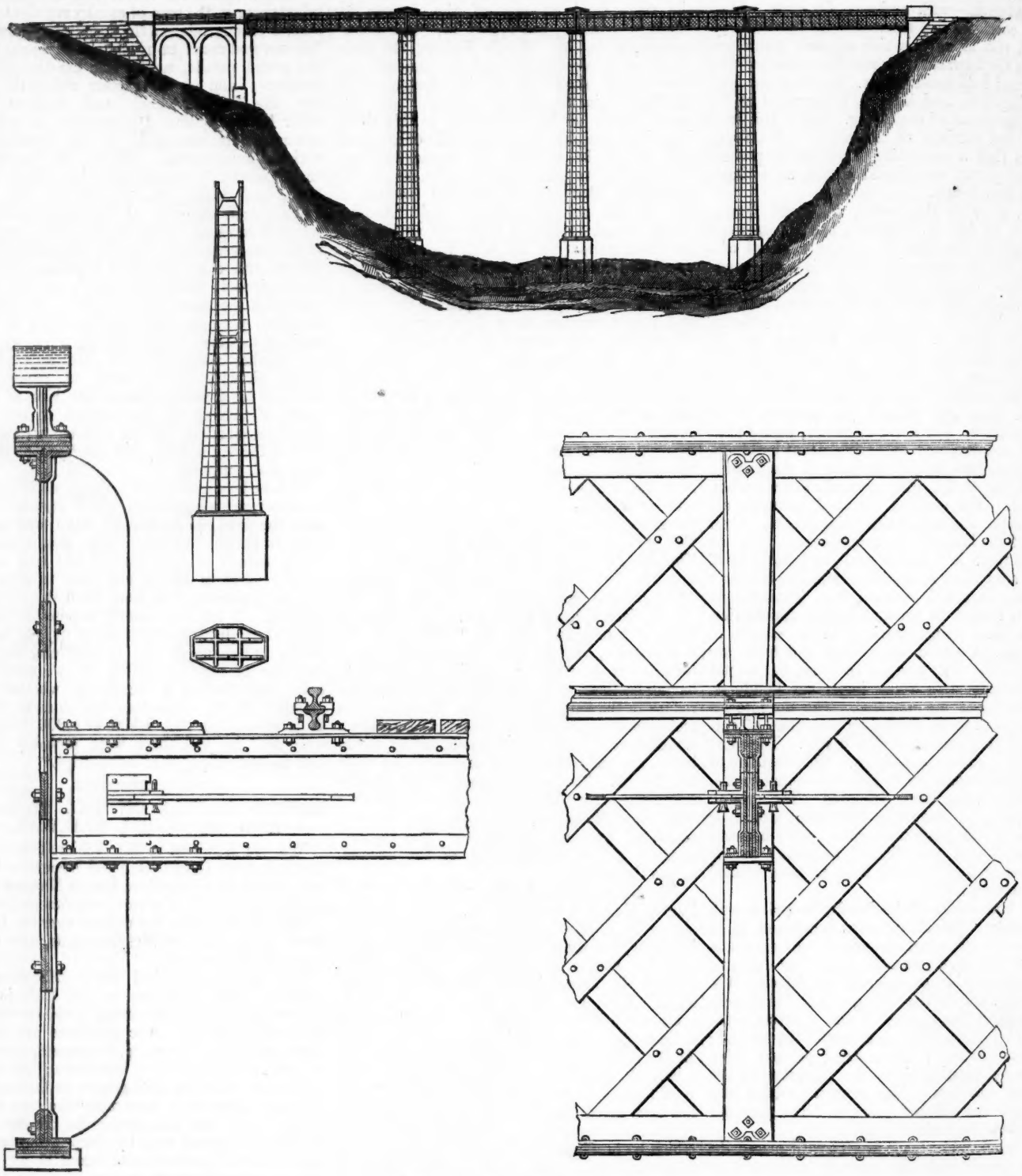
* The design for infantry barracks—No. 5, "Victoria,"—is by Messrs. Guillaume and Campbell.

We append the letter above alluded to. It refers to what it would be desirable to do in *all* competitions,—whether competitors have pecuniary compensation or not.

"SIR,—I would suggest that, should Government determine *not* to remunerate the architects as proposed in your last number, for their designs submitted in the late competition, they, the Government, should be solicited to cause reduced copies of *all* the drawings to be lithographed: it would render them more useful for general reference, and the presentation of a copy of the work to each architect concerned would, I think, be appreciated, not only for its great value, but also as an act of graceful courtesy to those gentlemen who have done so much towards the solution of a question really of importance to the nation at large. I cannot think that, under the circumstances, the necessary outlay should operate as an objection. Possibly photography might be of service to reduce the scale in the first instance.—E. B."

ST. GALL AND APPENZELL RAILWAY.

Lattice Bridge over the Sitter River.



Details of Bridge over the Glatt.

length of the bridge, and 40 feet in the direction of its breadth: these piers are smaller as they rise, having a batter of $\frac{1}{75}$th. The lattice frames, two in number, which support the roadway, are 13 feet 9 inches deep, and the rails are placed a little above the neutral axis, being 7 feet 10 inches above the lower flange of the lattice. These lattice frames are formed of bars of wrought iron, 5 inches wide, and $\frac{3}{4}$ of an inch thick, bolted in the usual manner; and crossing one another diagonally, they are strengthened by upright bars placed at intervals, 8 inches by $\frac{1}{2}$, which are stiffened by angle and vertical irons, as shown in the accompanying drawing of the details of the bridge over the Glatt, which is of similar construction. The two centre openings of the viaduct are 137 feet 9 inches span, while the two nearest the land, one on each side near the abutments, are 129 feet 10 inches between the supports.

This bridge contains 1,001 tons of cast-iron, at 22*l.* 1s. 2d. per ton; 238 tons of wrought-iron, at 33*l.* 14s. 6d. per ton; and 24 tons of iron, in bolts, nuts, screws, &c. at 40*l.* 15s. The foundation of each of the three piers cost 620*l.* up to the top of the masonry, where the iron work commences. The cast-iron was all imported into Switzerland, from Pfoxthin, in Germany; the wrought iron from Belgium; and the angle iron was obtained from England.

The excursion train, which was the first that crossed the bridge, consisting of two locomotives (the one called "The St. Gall, and the other, "The Appenzelle"), and twenty-five carriages each 30 feet long, and filled with guests, invited to be present at the ceremony, passed over the bridge three times, and remained on it for a long time, so that there was a very good opportunity of seeing how the bridge behaved. It only sank two lines when loaded with a weight of 227 lbs. to the square foot, and a rod firmly attached to the bridge, with a fine division marked upon it, being carefully observed by a theodolite during the passage of the train, showed that the bridge underwent no oscillation or lateral movement, as the division of the rod coincided with the cross hairs of the instrument, without any deviation, while the train was passing over it, precisely the same as when the bridge was unloaded. Before witnessing these experiments, it was thought that it would have been a good precaution to have made the bridge for a double line of way, so as to have given a greater guarantee against lateral motion; but, from the above experiments, it appears evident that the bridge is abundantly strong for all purposes to which it will be applied, as it showed no signs of weakness although loaded by two locomotives, and an unsually heavy train, while the sounds of

music, the firing of cannon, and the shouts of the assembled thousands, although rending the air, and throwing everything around into vibration, had no perceptible effect upon the viaduct.

The iron work of this bridge is made exceedingly light, having many interstices and open spaces left on every side, so that the beautiful scenery of the neighbourhood, and the distant mountains of Appenzell, almost always covered with wreaths of snow, may be seen through them to great advantage: and thus the new railway viaduct, instead of interfering with the beauty of the scenery, adds an additional charm to it, and is admirably in keeping with the weather-beaten rocky heights, surmounted with feathering firs, that flank the ravine on either side.

This railway, which joins the line from Zurich at Winterthur, forms a principal part of the important network of railways with which Switzerland will soon be covered, especially when it is continued on the other side of St. Gall as far as Rorschach, on the banks of the Lake of Constance, where it will form a junction with the South-Eastern Railway of Switzerland, which runs through the Rhine Valley, and is nearly finished as far as Chur, or Coire, the capital of the Grisons; and in the event of the peace lasting long enough, this latter line will be continued through the Luckmania, and so into Italy.

The portion of the line, however, between St. Gall and Rorschach, is fraught with many difficulties, the principal of which is the steepness of the gradients; for as the line has to rise nearly 1,000 feet in a distance of about eight miles, the gradients will hardly be anywhere much better than 1 in 40: add to this, the bad quality of the ground, which is exceedingly sidelong, and, from its nature, constantly subject to slips. Then, again, the cross valleys necessitate the construction of expensive works of skill, among which may be mentioned the stone viaduct of Goldach. The various difficulties and obstacles have now, however, been all, in a measure, overcome or removed by the indefatigable zeal and talent of the engineer; and this part of the line will be opened for passenger traffic in a very few months.

The accompanying drawings will serve to complete the necessarily short and imperfect description of this interesting railway, and the points which form so prominent and pleasing a feature in its construction.

THE ARCHITECTURAL ROOM; ROYAL ACADEMY.

ANXIOUSLY as we have aided the establishment of "The Architectural Exhibition," in Suffolk-street,—the provision of ample space for setting forth annually by plans and sections, as well as views, the works of English architects, we must continue to express a hope that Architecture may not be altogether unrepresented in the annual Exhibition of the Royal Academy. Attention is there gained for it from persons who at present, at any rate, will not travel after it, and in other respects the maintenance of its conjunction with the other fine arts is most desirable. In the present exhibition there are but few really architectural works,—between eighty and ninety; but considering the large number of drawings which were gathered together in Suffolk-street on the last occasion, we ought perhaps scarcely to express surprise. None of the Academician architects exhibit, but two of the associates, Mr. Sydney Smirke and Mr. Scott, do; the former sending two sections of the new reading-room at the British Museum, one showing it finished, the other showing its construction (1115); and the latter an isometrical view of Exeter College, Oxford, setting forth the contemplated new chapel and other buildings (1094); and a view of a new church about to be erected at Haley-hill, Halifax (1107), of the Geometrical, or Early Decorated period, and with a noble tower. The buildings for Exeter College are in the same style: the chapel has a polygonal east end, and a *flèche* springing out of the top of the roof at a short distance from it, after the *Saintes Chapelles* of France. Mr. Smirke's new reading-room, we have already illustrated and described. It is constructed wholly of iron and brick, lined with the fibrous material of which we spoke some time ago, intended to receive painted decorations, and sculpture to a considerable extent was to be introduced at the spring of the dome. We are glad to hear that the trustees have agreed to recommend the expenditure, at once, of the sum of 5,000*l.* on the painted decorations of the room, and we hope the architect will be allowed to introduce the best art that can be obtained,—not merely what will "do," but the best that can be had. The most elaborate and admirable drawing in the exhibition, or rather series of drawings, is (1154), "The Courts on the South Side of the Crystal Palace, Sydenham," by M. D. Wyatt, from whose designs, as all our readers know, they were erected. The amount of labour and thought expended on this work is scarcely realized by ordinary observers. Mr. E. Falkener has some elegant Pompeian Studies (1121, 1122); and Mr. F. P. Cockerell several very beautiful drawings of buildings in Rome and Venice, especially (1140) a study in the latter city. Amongst the drawings of buildings already illustrated in our pages, are (1118) Castle Cary Market-house, by F. D. Penrose; (1142) the Birmingham and Midland Institute, by E. M. Barry; (1146) the Music-hall in Covent-garden, by W. F. Hill; (1175) Bylaugh Hall, Norfolk, by Messrs. Banks and Barry, and some others. The last-named architects exhibit also a view of the new hall intended to be built in the rear of the Milton Club, Ludgate-hill, for which their designs were selected, it will be remembered, in a limited competition. It has an aspect of flatness, and will depend greatly for its effect on the decorations introduced. Mr. E. Barry adds a view (1080) of St. Saviour's Church, Haverstock-hill, wherein colour will be used to some extent. An increasing tendency to this is observable throughout.

No. 1061 is a design, by H. R. Newton, for forming a new roadway into St. James's-park, by taking away the ground on each side of the Duke of York's column: this would be a dangerous experiment not advisable. A way into the park at Spring-gardens, added to the road by the German Chapel, would answer every purpose. 1063, the Schools erected at Gold's-hill, West Bromwich, by S. W. Daukes, with their gablets, involves the question of water-pipes, raised by us some time ago;—a dozen pipes are shown: and this is further illustrated in (1083) Design for the proposed Town-hall, Rugby, by C. L. Eastlake, where five down-pipes are shown on the front, and two more would seem to be necessary. 1071 is the design for an iron church, by W. Slater, referred to in our recent notice of the Ecclesiological Society: this is placed so far out of sight, that we can form no opinion upon it. 1075, proposed interior of a new building on Cornhill for a commercial firm, by Messrs. Barnett and Birch, shows columns, arches, and coffered ceilings. A well-coloured drawing (1076) shows the interior of the new parish church of St. John the Baptist, at Bedminster, by J. Norton, with the sculptured reredos at the east end, which excited so much ill-feeling. The church is very creditable to the architect. 1081, the Branch Bank of England, at Hull, by P. C. Hardwick, is scarcely worth exhibiting; but in 1136, views of Addington Park, Bucks, the architect gives us something to praise: the style adopted is the later Gothic of France. 1134, new Assize Courts now erecting at Taunton, by W. B. Moffatt, does not speak its purpose, at least in the view here given. Made up of an assemblage of small parts, Domestic Gothic in style, we should have guessed its appropriation several times before we arrived at Assize Courts. 1145, St. Mary's Church, Martham, Norfolk, now in course of rebuilding, by P. Boyce, has one of the fine hammer-beam roofs for which the county is celebrated. In the City Bank now erecting in Threadneedle-street, at the corner of Finch-lane, set forth in 1148, by Messrs. Moseley, the circular arch of the entrance doorway in the circular corner has an effect which is not altogether agreeable. In 1155 and 1165 are set forth the mansion now erecting for Baron James de Rothschild at Ferrières, in France, by Sir Joseph Paxton. It is a very large and important structure, in arrangement something like the residence at Mentmore, erected by Sir Joseph, and exhibited some time ago, and has square towers at the angles. It is Italian in style, and has a rectangular porch, in the adornment of which sculpture is introduced to a considerable extent. 1171 gives a view of the schools and residence now erecting at Ferryside, Carmarthenshire, by R. K. Penson; and the same architect exhibits a view of Dynevor Castle, in the same county, where he has made some effective alterations. In 1173, the Inlet Tower for the water works now in the course of construction by the Government of India, for the supply of Bombay, Mr. Conybeare has adopted for the octagonal lantern and balcony at its summit, the Indian variety of pointed architecture, to show the applicability of it for structures of cast iron. Of Mr. Conybeare's elaborate report on the supply of water to Bombay we have already spoken. The design by P. Bremner (1177), for alterations at Branksea Castle, Dorset, the seat of Colonel Waugh (who was recently mentioned by us), shows a wilder luxuriance of gargoyles, bosses, statues, and stone lions, than we are in the habit of achieving, and will bear taming down. Amongst the good drawings may be mentioned 1057, the Upper Cloisters of a Convent at Valladolid, Spain, by T. R. Macquoid; and 1093, the Church of the Annunziata, Genoa, by A. W. Blomfield.

METROPOLITAN FIRES AND METROPOLITAN WATER SUPPLY.

THE remarks on "*Fires; the best Means of preventing them and arresting them,*" by Mr. Braidwood, published in these pages last week, are valuable and worthy of attention. There are many "flagrant cases" of faulty construction, and more cases of gross negligence in the use of fires and lights generally. Numerous as fires are, the only wonder is that they are not more numerous: take the case of house-construction. Do not working men of all trades smoke and use "*lucifers*" for lighting their pipes—said lucifers being thrown down at random? Do not some carpenters and joiners work knee-deep in shavings, with wood fires on the hearth, naked candles on the bench, and a naked pipe in their mouths? Do not house-painters use oil and turpentine regularly with waste cloth, cotton, or hemp, occasionally to wipe up stains; or, with the turpentine, to clean the work to be finished, throwing these down carelessly? Are not lucifers used in the kitchen, in the parlour, in the office, and in the warehouse? Do not masters and servants leave open boxes of lucifers about in improper places, scatter them carelessly in drawers, on counters, or on the floor? Now it should be remembered that the nibbling of a mouse, the friction of a shoe, or of a moving door, or of a drawer, or even the shaking, or falling, or crushing of a box containing lucifers, will ignite the matches, and a fire may be the consequence. The inference is, lucifer matches are not used with sufficient care: they should not be given to servants without due caution as to their use: they should not be allowed to lie exposed on shelves, on tables, on floors, or in drawers; and should only be kept in tin boxes. Individual care is absolutely necessary.

As to the metropolitan water supply, water may be abundant; but for fire-extinguishing purposes, it is not available without the intervention of fire-engines: there is the pressure in the mains, but it is not active, by reason of the pipes not being properly graduated, and the "head" being too distant. Again, only a short time since, there was not one improved fire-cock or hydrant on any of the mains within the bills of mortality: the old fire-plug was alone in use. Government have insisted on the companies carrying out many and valuable improvements in the mode of water-supply. The river water is taken above metropolitan sewage contamination: the water is filtered; and open reservoirs are abolished. The supply is to be constant, and at "high-pressure." But not one word as to *active* pressure and improved fire-cocks. In this respect there will be no change: rude wooden plugs will be driven into open pipe-ends, and 150 feet head will be absorbed by friction, so that 10 feet head is not

available. In many northern towns water will rise, in a jet, from the surface of any street, 90, 100, and even 150 feet vertical, in volume and force equal to many hand-fire engines. Large buildings and much valuable property have been saved in Manchester by the use of water so available and so applied. The water-mains throughout the metropolis may be made as useful as the water-mains are in Manchester. Improved hydrants, or fire-cocks, may be applied so as to supersede the clumsy and unscientific plug. The only difficulty is—lack of will and the money. Rent enough is paid by the consumer to demand the additional advantage and protection.

Over the whole of the metropolis, pumps are still in use. Many of these are resorted to for street and road watering: this is simply a barbarism and gross waste. A watering-cart stands idle whilst a man pumps, say, 250 gallons of water. This process may occupy fifteen minutes. Now, by hose and hydrant, from an active water-main, such a cart may be filled in thirty seconds. More than half the time of man and horse is consumed in return journeys: as much ground is traversed empty as full: with hydrants and a movable stand-pipe there need not be one yard in length of journey wasted, as a water-cart may be re-filled by the driver in less than five minutes at any point. One watering-cart, working under such a system, is equal to three working from pumps. The cost of each thousand gallons of water should not be more than sixpence. The roads in Hyde-park are watered from pumps: there can be no doubt as to this pump plan being more costly and more inconvenient. The old fire-plugs are a disgrace to the companies: for use in case of fire, for use in street-watering, and for general use, the pressure in the water-mains should be made active; proper hydrants should be fixed at short intervals, and all modern facilities for the use of water should be rendered available.

PROVINCIAL NEWS.

Peterborough.—The first stone of a training institution for schoolmasters was laid here on Wednesday in last week. The site was given by the Bishop of Peterborough, and consists of about an acre of ground on the north side of the cathedral, called Tout-hill-close.

Chelmsford.—The directors of the new Corn Exchange Company met on Friday in last week, to consider the tenders for the erection of the new corn exchange, and buildings connected therewith. Five tenders were received:—

Messrs. G. Mansfield and Son, London	£6,450	0	0
Mr. Jas. Brown, Bocking	6,200	0	0
Messrs. J. Little and Son, London ...	5,738	0	0
Mr. Wm. Hill, London	5,697	0	0
Mr. S. Simpson, Ipswich	4,923	3	9

The lowest tender was accepted. It includes the expense of taking out the quantities for parties tendering, and 100*l.* for any extras that may occur. The contractor guarantees, under a heavy penalty, to complete the building by the 1st of the ensuing October.

Leicester. — The tender of Mr. Broadbent, builder, for the erection of the new corn exchange here has been accepted. His offer was to construct the new exchange over the present market-house for 1,559*l.* to be finished externally, either in Portland cement, or in red brick. The architect, Mr. Ordish, decided that red brick should be used. The other tenders were,—Messrs. Stirk and Mayne, 1,655*l.*; Mr. Rushin, 1,929*l.* with 40*l.* additional, if a cast-iron roof were required. Another tender was lodged after the time specified, but not entertained. The requisite amount has been secured.

Oxford.—We understand, says the local *Herald*, that Mr. Faulkner's suggestion for public fountains as memorials of the peace has met with so much encouragement, that a public subscription has been originated, to which the Mayor has promised 10*l.* 10s. and other gentlemen donations also. The matter was to be considered by the commissioners on Wednesday.

Worcester.—The erection of St. Peter's Infant School here is forthwith to be commenced. The site is one between the parochial schools in Frog-lane and St. Peter's Church, and the southern front will face the northern side of the Porcelain Works. The new building will be 75 feet long by 23 wide, and of brick, with stone dressings, and chiefly Broseley tiles. It will be chiefly lighted from the front. The interior will be divided so as to give a class-room at one end and an entrance-hall and cloak-room at the other; whilst the central portion, to the length of 48 feet, by the whole internal width, will be appropriated as the school-room. The height from the floor to the wall-plate is to be 11 feet, the roof open to the ridge, and the timbers framed and stained so as to be ornamental. The front elevation contains five windows, the central three lighting the large room, and the others the smaller. The plainness of the front will be relieved by a gable at the centre, and the ridge of the roof over the class-rooms will be lower than that over the main building. The builder was Mr. George Hunt, of Evesham.

Dudley.—At the last weekly meeting of the local guardians, Mr. Lovatt, of the firm of Messrs. Bidlake and Lovatt, the architects of the proposed new workhouse, was in attendance, and a report frrm the building committee was read, announcing that thirteen tenders had been received for building the new workhouse and school. The amounts of the respective tenders were read; these were as follow. The first of the three amounts is for the workhouse alone; the second for the school; and the third for the two buildings:—

	£	s.	d.	£	s.	d.	£	s.	d.
No. 1...	14,625	0	0	3,250	0	0	17,875	0	0
„ 2...	13,503	0	0	2,770	0	0	16,273	0	0
„ 3...	12,703	6	0	2,528	3	0	15,231	9	0
„ 4...	12,460	1	0	2,673	7	8	15,134	8	8
„ 5...	12,295	0	0	2,700	0	0	14,995	0	0
„ 6...	12,415	0	0	2,505	0	0	14,920	0	0
„ 7...	12,323	19	7	2,556	10	5	14,880	10	0
„ 8...	12,296	10	0	2,479	0	0	14,775	10	0
„ 9...	11,918	17	11	2,570	7	1	14,489	5	0
„ 10...	11,664	0	0	2,683	0	0	14,347	0	0
„ 11...	11,441	0	0	2,553	11	6	13,994	11	6
„ 12...	11,457	13	4	2,460	5	8	13,917	19	0
„ 13...	11,520	0	0	2,314	0	0	13,834	0	0

The report stated that, so far as was known, the tenders were much more satisfactory than on the former occasion. It was resolved, said the report, that the seven tenders lowest in amount should be laid before the Board for consideration. The names of the last seven tenderers were given as follow:—No. 7, Mr. John Elliott, Wolverhampton; No. 8, Mr. J. S. Ferguson, Nottingham; No. 9, Mr. John Parnell, Rugby; No. 10, Messrs. Nelson and Co. Dudley; No. 11, Messrs. J. and G. Lilley, Measham; No. 12, Messrs. Trow and Son, Wednesbury; and No. 13, Mr. Charles Burkett, Wolverhampton. The subject was referred back to the committee. An entry on the minutes, expressing the satisfaction of the Board with the tenders, was agreed to. Mr. Lovett mentioned that the tenders would have been nearer still to the estimate had there not been the addition of a dining-room, costing 700*l.* or 800*l.*

Pembroke Dockyard.—The works now in progress at Pembroke Dockyard are expected to occupy two years in construction, as they embrace very extensive alterations and improvements. The fortifications at Dale Point, on the northern side of the haven, are proceeding, and, when completed, will form an important adjunct to the forts on Thorn Island and the Stack.

Warrington.—At the last quarterly meeting of the town council, it was stated, according to the *Manchester Courier*, that the museum committee estimated the cost of the present building, including plastering and heating apparatus, at 1,600*l.* leaving a margin of 400*l.* which would enable them to erect a curator's house in the north-east angle of the building. The plans so far acted upon had been drawn with the ultimate design of completing the building with a lecture-room, over which might be erected accommodation for the school of art, in case arrangements might be made with the committee of that institution for the purpose. The street-improvement committee reported that a shop at the bottom of Bridge-street and corner of Mersey-street, had been purchased for 300*l.* in order to widen Mersey-street. The general purposes committee reported that Mr. Coxon, the borough surveyor, had submitted a sketch of the kind of baths which he considered necessary for Warrington. He estimated the cost, exclusive of the site, at about 2,000*l.* and recommended Crown-street or Oxford-street as the most eligible site. A discussion ensued, and it was ultimately agreed that the baths in Church-street should be purchased. Mr. Litherland's tender for drainage, Messrs. Pennington's for walling, and Mr. Ladd's for erecting lodges, had been accepted.

South Shields.—At the South Shields Town Council meeting held on Wednesday in last week, the borough surveyor, Mr. Thompson, presented and explained the plan of the drainage for the Waterloo Vale and Central district. This work, according to the local *Gazette*, will be commenced shortly: the plan will be at once submitted for approval to the Central Commission. This large plan shows a system of drainage, extending from and including the Ogle Estate, to the Mill Dam as the main outlet. It accommodates Thames-street, and all streets and lanes of North-street, and the whole of Waterloo Vale, extending to Mount-terrace, as well as a portion of the densely populated part of the borough above the Mill Dam.

Dundee.—St. John's Church of Scotland schools, at Hawkhill, were opened on Friday in week before last. The building is capable of accommodating nearly 200 pupils (boys and girls), according to the Government rule. The site is central, and was acquired for an annual feu duty of 10*l.* commuted into a cash payment of 115*l.* and a 5*l.* feu duty, which is estimated at the value of twenty years' purchase. The General Kirk Session of Dundee defrayed the cost of the site.

Elgin.—A contract entered into with Mr. D. Morrison, for laying the High-street with square stone blocks, from the Court-house to the School-wynd, is now completed. There are now about a thousand yards of the street finished in this style,—the last 500 yards of which is laid down by the present contractor at an expense of 500*l.* The blocks of stone used, says the *Forres Gazette*, are of the hardest material from Spynie Quarry. They measure from 12 to 16 inches long, and 5 to 6 inches broad, and 9 inches deep. The causeway appears to answer the intended purpose. To have this improvement carried westward along the whole of the High-street is considered desirable. Elgin was long noted for its ancient highway, rising archedly towards "the crown of the causeway," where the high-minded folks were said to walk in a very exalted mood of mind: modern improvements, we suppose, are likely to modify this ancient state of things considerably.

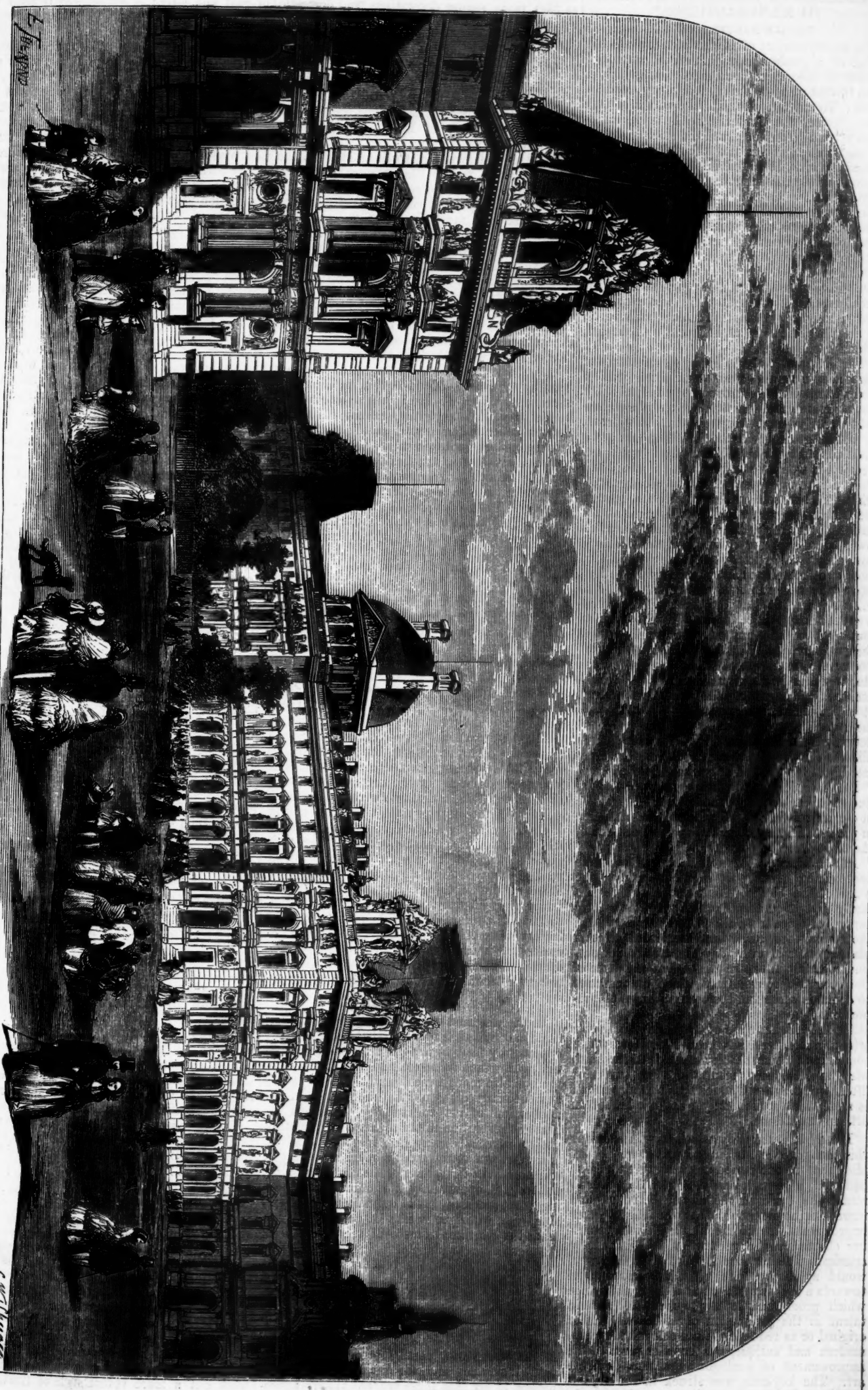
VIEW OF THE LOUVRE, PARIS.

IN illustration of the particulars given in our pages from time to time of the works which have been going on at the palace of the Louvre, we add a second view of that building, showing the new parts, with their rich adornment of sculpture, from the hands of many of the principal sculptors of France.*

DRAUGHTS IN CHURCHES.

MAY I ask some of your readers to give me a receipt for making a draughty church comfortable. A church has been built at Torquay, Devon, very lofty, with open roof, and in the winter it is impossible for the invalids who frequent the town to attend, from the cold draughts passing from the roof, and in summer the church is equally oppressive from want of ventilation, and the heat caused by the sun upon the slates. To remedy these evils the architect, I hear, has suggested felt between the boards and slates, but there is a dispute as to whether felt will be sufficient. Many persons wish for a false roof twelve feet below the present one, as they state the cold draughts are caused not by the cold air coming through the slates into the church, but by the hot air rushing to the roof and driving the cold air down into the church. Now can your readers assist *us* from their experience? It will be a real work of charity, as we suffer very much in the winter; and, by the advice of those who have also suffered and remedied the evil, we may obtain some suggestion that will do good service to the public, and especially to my fellow sufferers and myself. AN INVALID.

* See p. 1, *ante*, and elsewhere. On p. 137 will be found references to various notices of buildings in Paris in our previous volume.



THE ADDITIONS TO THE PALACE OF THE LOUVRE, PARIS.

PROGRESS IN DESIGN AS APPLIED TO MANUFACTURES.*

FICTILE MANUFACTURES.

In no department of British industry has the value of a gradual introduction of improved modes of decoration been more clearly proved than in that of porcelain and ordinary earthenware. To any one who, like the writer of this paper, visited the Staffordshire Potteries nineteen years ago, and observed the state of things at that time, and has had the privilege of an occasional visit, at stated intervals, during the period which has intervened, it must be very obvious that a change, such as we frequently hear pronounced as impossible in other industries, has come over nearly the whole of the productions of that district. Far from resting satisfied, however, with even the present state of things, it is quite clear that every coming year will tend to still greater progress than that already realised, and that those who pertinaciously persist in the common fallacy that to do as they have done is all-sufficient, will be left behind in the race.

The illustration of the fictile manufactures of Staffordshire in the Paris Exhibition was of such a character as to prove most unmistakeably that a great improvement had taken place since 1851; and, without being prepared to approve, on artistic grounds, all that has been done, yet, with the experience of the past upon our memory, it would be unjust not to award the credit due to intelligent effort and steady enterprise. To two houses, that of Messrs. Minton and Co. and Messrs. Copeland, the credit of the earlier movements is due; but others have followed, who, applying a better style of art to less exceptional articles than those produced by these two firms, have certainly aided in no slight degree the more recent improvements; and it is quite evident that, at the present time, whatever fault may still be found with the subjects employed for the purpose of decorating the cheaper ware, yet that the character of the art employed is much higher than formerly. In the blue transfer ware, for instance, there is a decided tendency to mosaic forms, less attempt at projection in light and shadow, and although the details are often more architectural than fictile, yet the result is felt to be more suited alike to the use of the article, the surface decorated, and the method of ornamentation.

In these forms, too, one can trace the influence of the merest elementary outlines in use in our schools of art, of which that established in the Potteries eight years ago has been one of the most practically useful.

In the cheaper kinds of porcelain, neatness approaching severity is gradually taking the place of the blotchy floral designs which formerly disfigured forms which ought to have suggested more tasteful decorations. Nor have the forms themselves been neglected, since in many articles of every-day use, a purity of outline formerly unknown has taken the place of the eccentric convolutions which bid defiance to common sense and the ordinary rules of proportion.

Into the higher class of porcelain painting an artistic refinement has been introduced which contrasts in a remarkable manner with the hard, wiry, and laboured results of some twelve or fifteen years ago. One feels that the workman is more of an artist, and yet not the less of an artisan than formerly.

It may be reasonably asked, to what cause is this change to be attributed? and it may be replied that at one period matters were really so bad that a change was inevitable in order to retain the trade in the higher branches, and there can be no doubt that the efforts after improvement in this direction led to corresponding efforts in the production of less costly articles. The introduction of Parian, however, would appear to have given the first impulse towards a higher style of art. The enterprise which prompted the employment of artistic talent in the production of statuettes, either original or as reductions from celebrated works, modern and antique, was soon engaged in the improvement of analogous branches of fictile art. The key-note was struck in Parian, but the theme has been carried out, step by step, in other materials and modes of application, such as tiles, vases, garden decorations, and domestic services.

Recently the efforts to emulate the productions of Palissy, and rival the Majolica of the best periods, have been attended with so much success, that he must be a hyper-critic indeed who would not join in a congratulatory compliment to the skill which had solved the problem of modern progress in British fictile art so successfully.

In thus endeavouring to do justice to the progress made in the Staffordshire Potteries, the productions of Worcester must not be forgotten. In 1846, a first visit to this city showed the writer how much in arrear its porcelain manufacture then stood, even as compared with that of Staffordshire. Since that period a marked improvement has taken place, and "the faithful city" bids fair to resume its old position, and even excel it, in the manufacture of the higher class of porcelain. Here, again, the influence of reproductions in imitation of past modes of decoration has had its influence, and the imitation of Etruscan methods in the manufactory of Messrs. Kerr and Binns, followed as this has been by the successful production of admirable specimens, which go far towards rivalling the best class of Limoges ware, cannot fail to influence other departments, and stimulate to corresponding improvements. Good work of any kind always has this healthy influence, that it renders the mind impatient of that which is less perfect, and thus imperceptibly necessitates progress. In this fact lies the value of bringing fine works of art of every kind before the people. The mind once imbued with a true sense of the beautiful, detects at a glance any anachronism in form or colour, although the "why and wherefore" of the defect may not be so readily discovered. This can alone come of sound education and a knowledge of principles.

Let it not be supposed, however, that all recent progress in fictile art is confined to reproductions and imitations of antique types or methods. During a visit, the other day, to the Staffordshire Potteries, two new modes of decoration presented themselves. Of one of these specimens are forthcoming. This consists of an inlaid coloured body upon Parian, and seems admirably calculated, from its conditions, to necessitate severity in ornamentation. The process has been so far worked out by Messrs. Rickuss and Toft, and is of an economical character. Of the other process, now in the course of development by Messrs. Pratt, no specimen has, unfortunately, been forwarded, owing, as it would appear, to the proprietors not being at present prepared to bring it before the public. Some admirable things, however, are in progress, and, judging from a complete specimen, the results appear likely to be of a very satisfactory character. The process consists of enamelling upon terra-cotta, the outline of the ornament being printed by transfer, and the colours afterwards put in with a brush.

METALLIC MANUFACTURES.

In the wide and constantly extending field of the fancy metal trades of Great Britain, the opportunity for progress in design is so great, that, with much to regret and find fault with, there is also much which cannot fail to satisfy and encourage all who take an interest in the application of art to industry. Perhaps the greatest revolution in the higher departments of design, especially as applied to gold and silver, has arisen out of the great modern discovery in science of the deposition of metals by galvanic action. The opportunity thus afforded for copying or reproducing, at a comparatively reasonable cost, the fine works of past times, has tended to educate the taste of the people, and lift us to a higher plane of judgment in modern productions. Thus, the test by mere material value in bullion weight, which had usurped the place of the esthetic value conferred by art, has been gradually giving way, and the importance of the latter is gradually becoming more and more recognised. This is seen in the character of the works now usually produced for testimonial services and for racing prizes. It is useless to say that these are not always appropriate,—often, indeed, exceedingly inappropriate,—but as an evidence that a desire for something more than a given number of ounces of gold and silver is giving way to some consideration of the form in which the metal comes, they are evidence of progress.

Again, let any person whose recollections of the displays made by our gold and silver plate manufacturers date some fifteen or twenty years, compare the character of the productions then exhibited in show-rooms with that of some of the leading houses now, and then consider the change. In the show-rooms of Messrs. Elkington, Mason, and Co. of Birmingham, there are at the present time ten times more works, in which appropriateness and purity of design, in connection with excellence of art-workmanship, is displayed, than could have been produced, twenty years ago, by all the houses in England put together.

The progress made in the manufacture of church plate and general metal work for ecclesiastical purposes, as indeed in all matters connected with church ornaments, is well known to all who take an interest in the progress of the arts of design. The manufactories of Messrs. Hardman, of Birmingham, Skidmore, of Coventry, and others, have produced works from time to time, within the last few years, which would have done credit to any country and any age, if the fact is taken into account that the question of cost was a serious element in their manufacture. And here it may be permitted to say a word about the influence which one mind alone undoubtedly exercised, not only on the particular department of art to which he specially devoted his attention, but, indeed, upon all of a kindred character, in which other minds were engaged who could appreciate his arguments, and apply the principles he enunciated. For however much we may differ in many points from the late Mr. Pugin, as to his special views of the mission of art, and the application of modern scientific and mechanical means to the reproduction of works of excellence, his earnest and fearless denunciation of all "shams,"—his exposure of false systems of ornamentation—his thoroughly zealous working out, "in season and out of season," of his own views in his own way, must ever command the respect of every true and earnest lover of art, since it is to the influence of his example, in one direction, that we owe so much of the progress to be recorded in other departments of art-manufacture. It is therefore but an act of justice to his memory, which all who differed from him on special points can at least afford to perform—to fairly and honestly acknowledge how much he did in his comparatively limited time for the domestic and manufacturing arts of his country, both directly and indirectly.

That an enormous amount of work is still thrown away upon comparatively very indifferent designs in gold and silver is quite true. That the human figures and animals are pressed into service, rightly or wrongly, and that these are often wonderful examples of the ignorance of their producers, is also true. That ornamental types, originally designed for any material but metal, are introduced without the slightest consideration as to fitness, is a fact which is patent to all who interest themselves in this question; yet, with all these drawbacks, and many more not so easy to enumerate, it is affirmed that much has been done during the past few years for designs as applied to gold and silver plate and its imitations.

In brass and bronze work the same may be said; for, notwithstanding the ultra-naturalesque character of many productions still in the market, and likely still to "sell," an approximation has been made towards a much purer style, and this, too, since the Great Exhibition of 1851. It must never be forgotten that much of the over-ornate tendency, so visible in the ornamental brass manufactures of Birmingham, arose from a slavish and unmeaning following of the French, especially after the Exposition of 1844. It is satisfactory to know, however, that the present tendency has not its origin in this direction, and that in the brass and bronze chandeliers, gas brackets, and works of an analogous character, efforts are now being made, and some of them very successful ones, too, to work out a more severe style of treatment as applied to those useful articles; and, whilst giving less weight of metal and more hand-

* From a Paper by Mr. Geo. Wallis, read at the Society of Arts.

work, to produce tasteful results by a little more brain work at the outset. In fact, manufacturers are beginning to acknowledge that artistic talent, carefully directed to practical ends, will *pay* when it secures simplicity and elegance in design. Nor is this applied so much to the costly articles as to those coming within the means of persons of moderate income. In short, the construction required by the use appears to be first considered in the specimens alluded to, and then the ornamentation is carefully adapted to the embellishment of the necessitated form. This, we apprehend, is sound practice, based upon sound principles. Under any circumstances, the results are satisfactory, so far as manufacture goes; and that the articles will make their way in the market in due time, it would be as unreasonable to doubt as it would be to doubt the influence of light upon darkness.

In iron castings, especially those suited to the furnishing of entrance-halls and garden decorations, to quote the display of the Coalbrookdale Company in the Paris Exhibition will be quite sufficient as an indication of progress in this direction; for, without absolutely declaring that everything manufactured by this firm is perfection, one cannot hesitate to acknowledge that the improvement, even since 1851, must be visible to the most careless observer.

In connection with this part of our subject, the remarkable strides in design as applied to the Sheffield manufacture of stoves, grate-fronts, &c. must be noticed. It will be remembered how thoroughly well Sheffield maintained its position in the Great Exhibition of 1851. Since that time great progress has been made, and, although this was not illustrated to its full extent at Paris, it is not the less a fact. It is not the less gratifying, too, to know that here, at least, the influence of the instruction given in the School of Art has been acknowledged, and that those who availed themselves of its teachings have sought to do it honour.

CHURCH BUILDING NEWS.

Romford.—The new Roman Catholic chapel, built at the expense of Lord Petre, at Laurie Town, Romford, was opened on Tuesday in last week, by Cardinal Wiseman. Mr. Nichols was the architect. The edifice is in the Early English style. The walls are of rag-stone facings, with Caen dressings, and the roof is tiled. The length of the body of the building is 65 feet, the width, 23; the sanctuary, 12 feet by 16: there is a porch on the south side, 13 feet 6 in. square. The height is 30 feet. The roof is open with diagonal braces, and diagonal boarding stained light and dark oak. In the centre is a bell turret, with cupola, braced on the roof, rising above it to the height of 16 feet, and with one bell. At present the building will seat 200, but provision has been made for the erection of a gallery to hold 50 more. The cost of erecting the chapel was 1,800*l.* and the total outlay about 2,000*l.* The builder was Mr. Hammond, of Warley. In the interior, the body of the chapel is occupied with a double row of low benches, stained to imitate oak, and the passage between them is paved with Minton tiles. The chapel is dedicated to St. Edward. Mrs. Clifford has presented a stained window to be placed above the altar, and also a rose window at the east end of the chapel. Tto the right and left of the entrance to the sanctuary are figures of the Virgin and Child and of St. Joseph.

Lacock.—The foundation stone of a new church was laid in this parish, on 26th ult. The church is being built at the expense of Captain Gladstone, M.P. at a cost of about 1,600*l.* and will contain 150 sittings. The foundation stone was laid by Mrs. Gladstone. The building will be in the Early English style, from designs furnished by Mr. Gabriel, of London, architect. The builder is Mr. B. Mullings, of Devizes. The church is dedicated to St. Ann.

Fisherton (*Salisbury*).—The consecration of Fisherton Cemetery took place on Thursday, in week before last. According to the *Wilts Mirror*, the cemetery is situated in the parish of Bemerton, nearly a mile beyond the county gaol, on the Devizes road, and is about two and a half acres in extent. The spot is a very elevated one. The entrance is from the Devizes road, through a gateway of Early English architecture, having a tower on the north side, in which is a small room for the porter, with other conveniences. The effect of this entrance, says the *Mirror*, is by no means picturesque; and it is said to be contemplated by the Burial Board to remove it, and erect a kind of lodge. The ground appropriated to members of the Established Church is on the south side, and is divided from the Dissenters' portion by a sunken fence. The chapel is in the Decorated style, and is about 27 feet long and 17 feet wide. It has a porch on the north side, a chancel, a side aisle on the south side, and a bell on the gable end. The exterior is faced with flints, with Bath stone quoins and windows. The roof is open, the seats are of wainscot, and the floor of the building is laid with tiles, some of which are glazed. The chapel upon the unconsecrated portion of the ground is situated on the north side, and is in the Perpendicular style, and about 21 feet in length and 14 feet in width. It has a bell-turret surmounted with a vane, and the exterior, like that of the Episcopal Chapel, is faced with flints, with stone quoins and windows. The roof is framed and panelled, and the paving is decorated with encaustic tiles. The architect was Mr. John Turner, and the builders were Messrs. Gover, of Winchester. Mr. John Harding has officiated as clerk of the works.

Dorchester.—The new cemetery extras, over and above the originally supposed cost, will be 600*l.* and at meetings held in the vestry-rooms of the parishes of Peter's, Trinity, and All Saints, to obtain the consent of the ratepayers to a further levy of rates, to cover that sum, the proposition was unanimously carried. Trinity parish contributes 264*l.* 8s. 10d.; St. Peter's parish, 195*l.*; and All Saints' parish, 140*l.* 11s. 2d. The whole costs attendant on the cemetery, including consecration, and two years' salary of the clerk to the board, printing, &c. were 3,800*l.*

Sherborne.—In St. Mary's Church an improvement will shortly be made, through the instrumentality of the rector, the Rev. Talbot Greaves, by the construction of a tower with peal of bells. The tower will be built at the end of the edifice overlooking St. Mary-street. Upwards of 600*l.* according to the local *Journal*, have already been voluntarily offered by the gentry and inhabitants of the town towards defraying the expense.

Chalford Lynch.—The corner-stone of a new church which is being erected at Chalford Lynch, in the parish of Bisley, was laid on Thursday, in week before last. The land was given by a chaplain at present at Scutari, and the principal part of the funds by an unknown individual. It is intended as a chapel of ease to the mother church at Bisley, and is being erected in the Decorative style of the thirteenth century, with accommodation for 287 persons, principally free. Mr. G. F. Bodley, of Brighton, is the architect. Messrs. Wall and Hook are contractors for the masonry; and Mr. Restall, of Oakridge, for the carpentry.

Marston (*Ross*).—On the 11th ult. the foundation-stone for the much-needed new church for the parish of Marston, near Ross, in the county of Hereford, was laid by Mr. W. Brooke. The building consists of a nave, chancel, and south porch, with a double bell-cot over the western gable, after the Decorated style of English architecture. It is from the design of Mr. T. Nicholson, of the city of Hereford, diocesan architect, and is in course of construction, under his superintendence, by Messrs. Pearson, of Ross, builders.

Shrewsbury.—The projected restoration of the Abbey Church in this town, has been brought to a standstill for want of funds. The church needs very considerable repairs and alterations—in the interior especially. Mr. Randal, the architect, has carried out the restoration, so far as the funds at his disposal would allow. Another appeal for support, according to the local *Chronicle*, will shortly be made, and we hope it may be successful.

Ilkeston.—Since the restoration of the parish church of Ilkeston, Derbyshire, the churchwardens have obtained subscriptions for transforming the hitherto Italian tower into an Early English one. This has been accomplished without taking down any part of it, with the exception of the unsightly pinnacles (erected with the tower, some seventy-six years ago), which have been replaced by new ones. The design is by Mr. T. L. Walker, late of Leicester, who left for China before the completion of the works, which have been completed by, and under the superintendence of, Messrs. Lindley and Firn, of Leicester, builders, the contractors under the same gentleman for the rebuilding and restoration of the church. No scaffolding was made use of, but no accident occurred.

Morton.—The parish church of Morton, in Derbyshire, has been entirely rebuilt within the last two years, and from time to time has received additions to its internal fittings and decorations. It is distinguished among the county churches by the quantity of stained glass with which it is enriched, and another large window has just been added, as a memorial to the late Mrs. Turbutt. The window-frame is in the geometrical style of fourteenth century, and was reserved from the old church as it existed before the late restoration: it is now filled with stained glass by Mr. Warrington. The tracery is filled with the monogram IHS, angels with thuribles in adoration, &c.; and there are three lower lights of large dimensions, of which the first contains the Saviour bearing the Cross, with a kneeling female in grief at his suffering: the central light contains the Crucifixion, the Virgin and St. John on the sides, and Mary Magdalene at the foot of the Cross: the third compartment has Mary at the feet of Jesus, after the Resurrection, illustrating the text "Touch me not," &c.; the whole three surmounted with foliage, intermingled with canopied arches, and tabernacles containing angels. The reredos beneath the window, composed of ancient carved work in oak, has been painted by Mr. Warrington.

Whetstone.—The parish church here has now been restored and repaired. The tower, originally built of pebbles and sand with very little lime, and the spire, have been taken down, restored, and rebuilt. The tower must have been in a very dangerous condition for many years, as in 1826 an attempt was made to secure it by building a stone ashlar wall and buttresses under part of the north side, at an expense of 1,400*l.* (a pretty profitable job to the builders, as remarked by the *Leicester Advertiser*, and nearly enough at the present day—using the old material—to have rebuilt the whole—tower, spire, and church). This wall only accelerated the destruction of what it was intended to sustain, and must have, ere long, brought the other parts of the fabric to the ground, as the present builders, in scaffolding for taking down the spire and tower, found the latter in a much more dangerous condition than, on examination from the ground, could have been imagined. The spire, built of Attleborough stone, has been used again, its shape being a little altered, and a lightning conductor added. The windows of the tower have been restored, and a new three-light belfry-window, new doorways and doors, with a new broken parapet and new pinnacles, cornices, strings, gargoyles, &c. &c. added. The new walls are faced with Enderby granite. The church has been thoroughly cleaned within. The chancel arch has entirely gone: the piers which formerly supported it and two rudely-carved capitals only remain. The church itself is altogether in a very dilapidated condition. A huge buttress of bricks being put up as a prop on the north side, and the soil having been thrown up to the walls, has rendered the foundations anything but secure. The whole cost of the rebuilding, cleaning, &c. together with a new stone platform and steps to the entrance-gates, will, it is expected, be under 800*l.* Messrs. Parsons and Dain, of Leicester, are the architects, and Messrs. Lindley and Firn the builders.

Alvaston.—The erection of a new church, of which Mr. Stevens is the architect, and Mr. G. Thompson the builder, has been carried on successfully, and the structure is now almost completed.

Bolton.—The Dissenters' chapel in the new cemetery will be erected by Mr. James Marsden; cost, 570*l.*; architect, Mr. Woodhouse. There

are other chapels, lodges, &c. to be contracted for.

Carlisle.—The friends of the Dean of Carlisle have resolved to place a stained-glass window in the cathedral to commemorate a series of losses recently sustained by him in his family. With this view, a meeting was held in Carlisle on the 30th ult. when a committee was appointed for the purpose of carrying out the object in view.

Armagh.—The Roman Catholic cathedral at Armagh is nearly completed. The United States have subscribed the sum of 2,302*l.* towards its erection. The amount *intended* to be spent on it is 10,700*l.*

ART AND THE REJOICINGS ON THE 29TH.

THE arrangements with which Hyde-park and the Green-park are disfigured, and have been for some weeks past, inspire us with apprehensions as to the way in which the promised "rejoicings" are to be carried out on the 29th. Some huge sheds, of surpassing ugliness, have been erected, and these are so designed, that *raking shores* on all sides are necessary to keep them up! The instructions are said to be for fireworks, "as on previous occasions," and we know what such an order as that led to in the case of the "proclamation." It would be a sufficient reply for ignoring every improvement in pyrotechny since 1814. Some say we may think ourselves very well off if we get anything so good as it was on that "previous occasion." There are many living who remember distinctly the fireworks and games, exhibited in the parks, in 1814;—the mock battle and burning of the fleets on the Serpentine, and the water rockets, which were played off with excellent effect; the Temple of Concord, in the Green-park, which was designed by Smirke, and the numerous allegorical transparencies painted by Stothard, Hilton, and other artists. Then there was the Chinese bridge, across the water in St. James's-park, with a pagoda of immense height, which at night blazed with gold and silver light, and from the towers of which fireworks of various kinds were let off with good effect. This tower accidentally took fire, and was destroyed, with loss of life.

Wonderful changes have taken place in the country since 1814: improved taste and a certain knowledge of art have spread amongst large classes: science has also produced great results. The improved scenery and costume of the stage, the displays at some of our public gardens, have assisted to make the multitude critical; and the facilities for travelling abroad have enabled many to form a comparison between the arrangement of foreign festivals and our own.

These and other considerations render it necessary that the fireworks and the general design and effect of the matters intended for the public amusement should be better in every respect than those made more than forty years ago. Comparing, however, the frightful wooden sheds to which we have alluded with the well-designed structures of good architectural proportions which were used for similar purposes on former occasions, for instance, in 1748, and the terms of the instructions given from head-quarters, we cannot help having some misgivings about the 29th. The advice and assistance of the architect and artist should be obtained by the gentlemen of the Ordnance, and something like art should be imported into the devices. It is said that large masses of troops will be brought for the purpose of review into the neighbourhood of London. Might not military music on a very great scale be made available? Handel composed warlike music expressly for a public rejoicing about a century ago.

In 1814, large galleries were erected for the accommodation of the Court and others, and a portion of St. James's-park was set apart for those who chose to pay an admission fee. This appropriation of space for exclusive purposes seems to have been adopted with some misgivings, for the Government issued various notices of their great anxiety to give every accommodation to the public.

Many persons are now seeking to know how they are to see the fireworks without difficulty; and no doubt some provision is necessary; for, without desiring the division of classes, or anything of that sort, we ought to remember that a large number of children and females, unaccustomed to great crowds, will be brought to see this sight,—for the safe accommodation of whom "Pater Familias" would willingly pay. We have heard of one, indeed, who wanted to hire a house in Park-lane for the night, and was repulsed with scorn! A gallery well placed, covered with crimson, and decked with banners, would add much to the effect; and if it were generally known that any sum paid for admission would be appropriated to the relief of the children of soldiers who have fallen in the late war, we believe that the public would be perfectly satisfied. Ample entrances to all the parks should be made.

THE CRYSTAL PALACE, SYDENHAM.

THE opening *fête* for the new season, held on the 9th, when the Queen and Prince Albert were present, and the Scutari Monument and Peace Trophy, designed by Baron Marochetti, were unveiled, passed off brilliantly, and gives promise which should lead to a large issue of season tickets. The presence of five or six hundred of our soldiers from the Crimea, who defiled before her Majesty, gave an almost national character to the meeting, and inspired the greatest enthusiasm. The Scutari Monument is erected in the Nave, on the south side of the Centre Transept; a great mistake, so far as the building is concerned, as we have already said: the Peace Trophy is on the north side; and Marochetti's two Equestrian Statues of Richard Cœur de Lion, and her Majesty Queen Victoria, stand respectively at the foot of the Monument and the Trophy. The Monument consists of a lofty obelisk on a quadrangular base, which has a winged figure at each angle, and an inscription on the face: the whole height is about 100 feet, and the general effect not unsatisfactory. We cannot say as much for the Peace Trophy: a female figure with arms outstretched, and clad in gold and silver tissues, stands on a pedestal of the ugliest possible form, coloured in the ugliest possible manner. It would do discredit to a third-rate confectioner. The rapidity with which the Monuments have been put up is very remarkable. The fountains played in the afternoon; and all the arrangements made by the Company were very excellent.

METROPOLITAN BOARD OF WORKS.

AT a Meeting of the Board held on Friday, the 9th, the following reports by the Superintending Architect were agreed to:—

1. On Mr. R. Carbine's application for consent to erect a shop on the forecourt of No. 6, Pleasant-place, Hackney.

2. On application of Mr. Geo. Legg, for consent to the erection of a bow-projection to the front of Mr. Bryan Donkin's house, Grose's-buildings, Blackheath.

3. On application of the Board of Works of Lewisham, for consent to erect a porch on the forecourt of No. 2, Grove-place, Lewisham.

4. On application of Mr. Samuel Hemming, for the approval of the construction of a temporary iron church at Highbury.

5. On application of Mr. Richard Cattarns, Secretary to the Iron Steam Boat Company, for approval of the construction of a travelling crane at Nine Elms, Vauxhall.

6. On application of Mr. James Gooch, for consent to the erection of an addition in front of No. 1, Medina Cottages, Islington.

7. On application of Mr. Joseph Thompson, for consent to the erection of a building on the forecourt of No. 8, Clarence-place, Camberwell-road.

8. On application of Mr. James Telfer, for consent to erect a shop on the forecourt of No. 9, Durham-place, Hackney-road.

9. On application of Mr. Alfred J. Hiscoks, architect, for approval of the construction of an iron building at Tyndale-house, Wimbledon Park.

10. On application of Mr. F. Bellamy, for approval of the construction of a poultry-house in the rear of No. 5, Medina-cottages, Seven Sisters-road, Islington.

11. On application of Mr. R. L. Sibley for a fee for supervising the erection of a furnace chimney-shaft.

12. On application of Mr. John Tarring, architect, for consent to the erection of a porch to Sussex-villa, Camden-hill, Kensington.

At a previous meeting, in respect of a difference between the architect of the Surrey Gardens and the District Surveyor, as to the construction of parts of the new Hall, the Board determined, with the advice of the Superintending Architect, to support the District Surveyor in his objections; and accordingly alterations were agreed upon by the architect of the building to meet these views.

COMPETITIONS.

Middlesex Industrial School.—We are glad to be able to state that at a meeting of the Committee of Magistrates for providing this school, held on Monday last, it was resolved to refer the forty-one designs sent in to three architects, not being competing parties, to select the seven plans in their opinion most suitable, to carry into execution the printed instructions issued by the Committee. The gentlemen invited to make this selection are Mr. Sydney Smirke, Mr. P. C. Hardwick, and Mr. Pownall, the County Surveyor.

Independent Chapel, Aylesbury. — We are informed that twenty-four designs were sent in, and that the one by Messrs. Poulton and Woodman was accepted: it is a Gothic design, to cost about 1,500*l.*

Norwich Workhouse.—I have just received the "Instructions to Architects," which I beg you to notice in the *Builder*, on account of one special peculiarity. They provide, by clause No. 20, for the drawings being sent, not by railway or carrier, but *by post*, prepaid; a provision which also appears in the advertisement for designs. Now the specified drawings will each require a sheet of double elephant paper, which, to go "by post," will require *folding twice*, viz. across its length and across its breadth. No drawing *can* be strained, or framed and glazed. It is evidently the intention of the guardians to get rid of the exceedingly troublesome mode that now obtains, and to confine all the competitors alike to plain unadorned sheets of paper only. The "sending in" by post, is therefore a very wise arrangement, which will save the competitors much annoyance, and enable the guardians to receive and examine all the designs in one tolerably sized room, instead of having to hire the whole of the apartments of a town mansion to see them in, as was the case with the designs for the Army and Navy Club, and more recently the plans for the Government Barracks. It will, however, be utterly unfair if the guardians do not rigidly adhere to their own rule, by positively refusing to receive any designs transmitted otherwise than by post; and I beg you to give me a corner of the *Builder*, to impress on both guardians and competitors the vast importance of *strict compliance* with this part of the instructions.

A PROBABLE COMPETITOR.

MANY THINGS.

OLD "whitewash," &c. may readily be removed from walls by scrubbing with sand and water,—the latter being previously acidulated with about ·04 of its weight of commercial hydrochloric acid. The commonest variety of the acid, to be had for 1d. or 1½d. per pound should be used for the purpose.

To your Melbourne correspondent who wishes to cool his habitation, I can only say that cold is always produced by evaporation, and that the temperature is lowered in proportion to the amount of surface exposed: the rest must be left to your correspondent's ingenuity. If he can arrange some highly porous covering for his roof, and can keep the same constantly moist (not wet) by the help of a good water supply and a few yards of small tubing perforated with fine holes throughout its entire length, I doubt not that the desired object will be satisfactorily attained.

The "porous surface" might be made in many ways: layers of hay or straw even would answer, if occasionally renewed; and I think the employment of "boiler-felt" would leave nothing to be desired: in a word, let your correspondent examine one of the "Patent Porous Butter-Coolers," lately introduced, and carry out the same principle *in extenso*.

It may perhaps be as well to mention that a cheap and efficient imitation of the above convenient, but, for the million, rather high-priced article, can be easily manufactured in the following manner:—

Take an ordinary flower-pot of the required dimensions, invert it, and stop the small hole with "Portland cement;"* then insert over it another pot (of

* One part of the cement and two of fine sand.

such size that the space left between the sides of the two shall be rather less than half an inch), and fix their rims together at the bottom with the same cement. The inside of the smaller pot must be made impervious by a coat of some resinous substance, say either a mixture of wax and resin applied in the melted state, or else some "liquid glue" (solution of ordinary "shell-lac" in "methylated spirits"), laid on with a brush. The butter-cooler is then complete. Care should be taken that the pots are quite dry before the varnish is applied to the inner one, and three days should elapse after this last operation before the cooler is used.

If it be desired to combine a cooler for wine, &c. with the preceding, a small unglazed drain-pipe may be cemented (socket-end downwards) upon the top of the butter-cooler, and the object is accomplished. The cooler is filled with water from the top through the hole left in the larger flower-pot, and should rest on a large plate, with the butter, cheese, or other edible raised slightly on a smaller one underneath the cooler itself: a bottle may then be placed in the upper part of the contrivance. Some of the coolers used at present allow the water to permeate their substance and pass to the inside: as must be sufficiently obvious, this arrangement will not.

Certain substances (for instance, cream cheese) are injured by a moist atmosphere: in such cases a little Scotch oatmeal, carefully dried, should be placed round them: this will keep the confined air perfectly dry.

In answer to "A Builder," I beg to say that a solution of soluble silica is of great service in making friable or partly-decomposed building-stones hard and durable: the patent process of Mr. F. Ransome is, in my opinion, the best. Upon the subject of "soluble silica" I shall probably have a word or two to say hereafter.

"Philo's" suggestion about coffee and eggs I have known and often applied for some years past. I would merely warn your readers against the sudden addition of boiling water to a concentrated solution of albumine or vitelline (as present in the egg), as coagulation then generally takes place, and the curd thus formed is most unwholesome and indigestible: the addition of a very small pinch of carbonate of soda will prevent coagulation, otherwise the water must not be quite boiling.

I should imagine that iron water-pipes might be cleansed by filling them with brine (or dilute oil of vitriol), and passing up them strips of metallic zinc in contact with their inner surfaces, allowing the whole to remain for a day or two. If the pipes were then flushed, and a small piece of zinc kept attached to them here and there, inside, I think your correspondent would no longer complain of the ferruginous nature of his water. WENTWORTH L. SCOTT.

INSTITUTION OF CIVIL ENGINEERS.

THE evening of the 29th ult. was devoted to the discussion upon Mr. F. M. Kelley's paper, "On the Junction of the Atlantic and Pacific Oceans, and the Practicability of a Ship Canal, without Locks, by the Valley of the Atrato."

It was admitted that a correct description had been given of the routes hitherto proposed, and of the valley in question, but that the route by Panama would be found the most economical and most convenient, if the communication was made between the River Chagres and the Rio Grande, where there were only fifteen or sixteen miles from tide to tide, instead of by Chorrera, as proposed by M. Napoléon Garella.

A letter was read, addressed by Baron Von Humboldt to Mr. Kelley (after examining the maps and plans), expressing great confidence in the survey made and levels taken by Mr. Kennish and his predecessors.

Humboldt expressed an opinion that a free and open discussion would demonstrate the relative advantages and disadvantages of each proposed locality, and there would really be little difficulty in tracing the proper route, wherever there were good plans and sections, such as had been made under Mr. Kelley's directions, of the valley of the Atrato. His opinion in favour of that route, as compared with all the others, had always been strongly expressed; and, in his works, he had even given all the details he had collected, relative to the small canal stated to have been made in the year 1778, by the Indians, under the directions of a monk, the Curé of Novita, in order to unite the waters of the River Raspadura with those of the River San Juan, and thus establish a water communication for canoes across the Isthmus. He alluded also to the labours of Capt. Fitzroy, R.N. who had, in his report on the Isthmus of Central America, descanted on all the known routes; and he recalled the statement of Lieut. Wood, R.N. when surveying the coast, to the effect that he travelled on foot with native guides, from Cupica to the Napipi, in which he bathed, and returned to his ship within six hours, and that the most elevated ground passed over did not exceed 300 or 400 feet. In fact, Humboldt looked upon the proposition of forming an inter-oceanic canal by the valley of the Atrato as perfectly feasible; and he even added, "without locks, or, if possible, without tunnels."

Notices of Books.

WE wait for space to notice as they require a number of books now before us;—Mr. Cresy's "Supplement" to his "Encyclopædia of Civil Engineering" (published by Messrs. Longman), which contains valuable matter; Mr. William Linton's beautiful volume, "The Scenery of Greece and its Islands," illustrated by fifty views (Lodge-place, St. John's-wood); Mr. Ruskin's fourth volume of "Modern Painters" (Smith and Elder); M. Tegoborski's work on "The Productive Forces of Russia" (Longman); and Mr. Wornum's "Characteristics of Styles: an Introduction to the Study of the History of Ornamental Art," published by Chapman and Hall. The same publishers have issued a volume by Mr. Burchett, "Practical Perspective;" the course of lectures delivered in the schools of art in connection with Marlborough House, where Mr. Burchett is head-master of the Training and Normal School. From Messrs. Blackwood we have "The Science of Beauty, as developed in Nature, and applied in Art," by Mr. D. R. Hay, which is a *résumé*, with some original matter, of the author's former works, for those who desire to become acquainted with his theory of beauty in form and colour. Mr. H. R. Twining's second volume on "The Elements of Picturesque Scenery" (Chapman and Hall), is full of thoughtful and suggestive observations for those who will patiently study it. The eighth volume of the "Sussex Archæological Collections, relating to the History and Antiquities of the County," published by J. Russell Smith, for the Sussex Archæological Society, contains several papers of considerable value and interest.—Mr. Ruskin's "Notes on some of the Principal Pictures exhibited in the rooms of the Royal Academy, &c." (Smith and Elder), differ in this from the pamphlet of last year, that whereas then the notices were chiefly adverse, they are now, with the least possible exception, complimentary. In his preface Mr. Ruskin makes some observations respecting the probable difference, in aim, between anonymous and acknowledged criticism; asserts "the dishonesty of criticism in general;" and expresses regret, in which we participate, "that people should be so ready to call every kind of fault-finding 'hostility,' the moment they can bring it home to a known person."

Miscellanea.

OFFICE TABLES IN THE METAL TRADES.—A large sheet adapted for office walls has been published by Mr. William Johnston, of Glasgow, Metal Merchant, containing numerous tabular arrangements on the properties and prices of the metals chiefly used in the arts and manufactures. It is said to be compiled from the most recent and authentic sources, and contains much valuable and useful matter, including a central map of the fluctuations of price in the chief metals during the last sixteen years, and a general table of the physical and chemical properties of all the metals and metalloids, separate tables showing the weights of various forms and sizes of manufactured metals, &c.

MECHANICAL DRAWING AND EDUCATION OF THE HAND.—In a little sixpenny tract under this title, printed at the United National and Free School, Painswick, and sold by Groombridge, the advantage of the cheap French cases of drawing instruments, sold in Paris at from 1 franc 75 cents, or 1s. 6d. up to 20 francs or 16s. for use in primary and other schools as well as schools of art, is urged in form of a letter to the Dean of Hereford, by Mr. W. H. Hyett, F.R.S. There are samples of these cases in the Museum of the Department of Science and Art in Marlborough House. Surely the same sort of instruments could be as cheaply produced in this country, did the mathematical instrument makers know there was a sufficient demand for them. In the tract alluded to, their importation wholesale is recommended. Our home manufacturers should see to this, and by providing a prompt supply prevent the establishment of such a trade to their own prejudice. The tract of Mr. Hyett is worth perusing.

CLARE MARKET.—There is nothing like the "argumentum ad hominem," and I will plainly put it to you, as your house of call is in the locality in question, to ask yourself when you next walk cityward through the confined precincts adjacent to Lincoln's-inn Fields, whether such an ill-conditioned, badly accommodated, offensive, and dirty thoroughfare as that leading through Clare Market, ought to be tolerated; and whether you are not, as a public advocate, bound to protest against it? Late in the evening, especially on market-days, the press of persons there is so great, as not inaptly to remind one of a flight of rooks or starlings, fluttering over a feast fortune has presented to their notice. Surely something may be done to rectify this abuse. Model lodging and washing houses we have got the poorer classes, is there no means of providing appropriate places for marketing? I believe there are some parts of the metropolis where ample provision is made to this end. Perhaps it will be urged, that there would be an interference of vested rights, an immemorial usage perhaps of vending cats' or dogs' meat; one would certainly be averse to give occasion of umbrage to the victuallers of the canine and feline tribes, but no one in his senses will dispute the position that these are very trifling considerations, when placed in competition with what concerns the welfare and dignity of the "human form divine." As one of the public interested, I am content to leave the subject in your hands: perhaps it may have been previously agitated; if not, I hope it will not escape the notice of the *Builder*, and if it should happen that a phalanx of respectable inhabitants of the neighbourhood should, with an eye to amelioration, invade the passages of Clare Market, it is to be hoped they will not find the "pass" another Thermopylæ stoutly defended by "three jolly butchers."—FORUM.

CHELTENHAM SCHOOL OF ART.—The report for the third year has been just presented to the committee and friends of this school, by the hon. treasurer, Mr. W. M. Tartt, J. P. Whilst maintaining its usual amount of teaching at the central school, its operations have been widely extended amongst the colleges and schools of the town; the master, Mr. James Wright, having altogether about 1,100 pupils under instruction, in nine or ten separate institutions. In all an extensive use is made of the black board and class lectures. In the central school the evening students have commenced a small weekly book subscription, in order to form a nucleus of a Fine Art library, and to secure the *Builder* and *Art Journal* being always on the table for their information in Art matters.

THE VICTORIA DOCKS.—Certain modifications are being made in the twenty-one years' lease of the works of the Victoria Dock Company, to Messrs. Peto, Betts, and Brassey, one of which comprises an increase of the sum for expenditure in the construction of works on the additional land east of the docks, from 933,000*l.* to 1,199,000*l.* the entire parliamentary capital, under reservation of 5,000*l.* as a bankers' balance in hands of the directors. Sir M. Peto mentioned at a recent meeting of the company, that the tonnage entering the docks has exceeded 1,000 a-day since the opening.

NEW SCHOOL OF ST. THOMAS, CHARTERHOUSE. The foundation stone of the New School of St. Thomas, Charterhouse, Golden-lane, was laid on 8th inst. by Mr. W. E. Gladstone, M.P. in the absence of the Marquis of Lansdowne, who was to have gone though the ceremony. The existing schools of St. Thomas, Charterhouse, were established for the purpose of educating the children of the costermongers and poor inhabitants of Golden-lane and Whitecross-street. Of the lowest class of children, however, there are still 2,386 who do not attend any school whatever. To meet this deficiency, the present school has been promoted. A freehold site in Golden-lane was procured, and plans prepared by Mr. Hesketh for a building containing three school-rooms, and capable of accommodating 1,000 children. The cost of this building (including purchase-money of site for building and play-ground, 2,200*l.*) is estimated at 8,452*l.* Two-thirds of this, viz. 5,634*l.* 13s. 4d. will be defrayed by the Committee of Council. For the remaining, viz. 2,817*l.* 6s. 8d. the treasurer (the Rev. Mr. Rogers, incumbent of St. Thomas, Charterhouse) appeals to the public.

RATCLIFF, OR REDCLIFF.—We are informed that Mr. Andrews, the engineer, has brought to light some interesting relics of former London, in excavations making at Redcliff for a new dock for the West India Dock Company. Our correspondent says they came to a stratum of red earth, and thinks we may have here the reason of Redcliff being so named. There was also an extensive causeway of wood construction at a spot known as the Danish-causeway. There is a street here called Shakspeare's-walk. The reason may be worth inquiring into. We are told many ancient fragments are found, and, from want of care, are taken possession of by the workmen.

STRIKES IN SCOTLAND.—The masons in Kilmarnock struck work on Saturday before last for 26s. a week. The miners in various parts of Scotland have for some time been on strike, and the struggle still continues, although the men are getting worn out by privation and long endurance. It is computed that for some weeks past 40,000 men have been voluntarily idle, and an amount of wages equalling 320,000*l.* has been lost to them and to the country. The strike is against a reduction of wages.

ACCIDENT WITH A LADDER.—In Clement's-Inn-passage lately, three men were repairing the roof of premises belonging to a butcher, and having all got upon the ladder at once, after performing their work on the roof, while in the act of coming down, the ladder broke, and all were precipitated to the ground, except one, who was caught in the thigh by the butcher's hooks, where he hung till extricated. The other two were also severely, if not fatally injured.

NORWICH FREE LIBRARY.—At the last meeting of the Town Council, the committee reported that the Free Library would be ready for occupation next Michaelmas. The cost of the site was stated to be 1,850*l.*, and of the building, including all expenses, 4,108*l.*, making a total of 5,958*l.* At a previous meeting, statements were made that the contract had been broken by the erection of the additional story. The committee, including several legal gentlemen, are said to be of opinion that it is not broken, there being the usual clause in it for any enlargement or alteration of the original plan. The contractor, says the *Norfolk Chronicle*, has taken a whole year for the erection of another story. Though the money has been advanced for the building, some members of the council will not vote for a halfpenny rate. In the new building, besides three vaults and a large room for the Free Library, there will be large rooms for the Literary Institution, the Museum, the Chamber of Commerce, and the School of Art. A subscription has been opened for the purchase of books, and the secretary has already received a considerable number in the shape of donations.

ACCIDENT AT THE WEST INDIA DOCKS.—During the heavy north-east gale on Tuesday in last week, an accident took place at the West India Docks, by the bursting outwards of the lock gates of the Limehouse entrance of the South West India Dock, or City Canal, by which the whole of the shipping in the dock was placed in peril. The canal runs parallel with the large principal export dock, and within the last year or so, a new dock of gigantic proportions has been constructed at the Blackwall end, which connects the canal with the other extensive basins of the company. The entrance-locks are each fitted with two gates, so as to equalize the pressure of water. At the Limehouse end, however, the outer gate nearest the river was undergoing some repair, and could not be used, so that the whole pressure of water in this section of the dock was against the inner gate. It was constructed of timber 2½ ft. thick, ironed and bolted, and so built and hung as to open inwards. In the course of the evening the wind blowing directly up the canal, had the effect of causing some swell at the Limehouse extremity. The tide in the river was nearly at its lowest ebb, the entrance-lock as far as the inner gate almost dry, and on the other side of the gate in the dock there was a depth of water of some 20 feet. Suddenly the gates, probably weighing 20 tons, were smashed outwards, and swept in fragments into the river, the waters of the canal bursting down into the lock with overwhelming fury. In the torrent were swept away craft of almost every description, but two boats only are said to have been lost, although many were stranded. There were between 70 and 80 merchant ships lying at the various jetties, at each side of the canal. These were carried away from their moorings. The larger ships, however, quickly grounded in the mud. The gates are reported to have been almost the only property injured, and the entrance has been refitted.

CAMBRIDGE ARCHITECTURAL SOCIETY.—At the third meeting of this Society, held on Wednesday, May 7th, the Rev. H. R. Luard read a paper on the Church of S. Apollinare in Classe, at Ravenne. He dwelt particularly on the mosaics which adorn its walls, and gave a sketch of the rise and progress of that art.

A SCOTCH ARCHITECT IN NEW YORK.—A New York paper speaks in high terms of the fine specimens of domestic architecture to be seen in the celebrated street Broadway in that city. It says,—"Wonderful piles of marble, brown stone, and brick have arisen as if by magic, and the indefatigable pioneers of up-town civilization are still building with unabated industry." In Thirty-seventh street, also, it says,—that "a number of houses are going on which bid fair to surpass everything in the neighbourhood." This high praise is chiefly bestowed on Mr. D. Jardine, architect, New York, from whose plans the buildings referred to were erected. It gives us pleasure to learn that Mr. Jardine is a native of Whithorn.

POLYTECHNIC INSTITUTION. — The unfavourable weather on Monday had little or no effect on the numbers visiting this establishment. Two new musical performers were introduced. Mademoiselle Mundie on the Cyther or Zitter, an instrument in use in the south of Germany, executed two pleasing pieces, and met with a cordial reception; but the extraordinary performance of Herr Ziros on the musical toy the Hemmilinska, must be heard to be appreciated. Picco's Pastoral Tibia requires the accompaniment of a band, and is a wonderful performance; but Herr Ziros is his own accompanyist, and executes three distinct parts with great facility. The entertainments concluded with an illustration of Bunyan's Pilgrim's Progress, some of the views for which are not so good as they should be. We must not forget to mention an excellent model of the north and south sides of the city and fortifications of Sebastopol, on a scale of 36 inches to a mile, which has been added to the collections here.

MR. WICKES'S "SPIRES AND TOWERS."—A wish has been expressed by some of the subscribers to Mr. Wickes's work, on English Mediæval Spires and Towers, that a supplementary volume should be issued, containing a number of beautiful and interesting illustrations, which want of space necessarily excluded from the two volumes already issued; and the author has decided on preparing such a volume for publication, if sufficient patronage be extended to the undertaking. It would comprise upwards of sixty subjects (the majority of which are referred to, and described in, the essays contained in the work itself), and would be uniform in size and price with the former volumes. As the publication of this supplement would involve considerable time, labour, and expense, and as it would be valuable to those only who possess the preceding portions of the work, the number of copies printed would be limited to the actual number of copies subscribed for, and the author, therefore, is anxious to receive, as speedily as possible, the names of those patrons of the work who desire to be furnished with copies of the supplement. The published volumes were so well done, and form so excellent a work, that we sincerely hope a sufficient number of subscribers will be found to induce Mr. Wickes to carry out this proposition.

THE ARCHITECTURAL MUSEUM.—Two lectures have been delivered here in accordance with the advertised list. We shall as heretofore print the substance of them.

THE BIRMINGHAM RECREATION SOCIETY.—The information sent us on this subject it appears was (doubtless inadvertently) wrong in naming Sunday as the day on which the rooms of the Society are open from 2 p.m. till 10 p.m.: it should have been Saturday not Sunday. The rooms do not appear to be open at all on Sunday.

THE RESERVOIR IN HYDE-PARK. — It has often struck me with surprise, and must, I think, many other frequenters of the parks, that the unsightly reservoir near Grosvenor-gate should still be tolerated. The parks have been greatly improved within these last few years in planting, widening walls, placing seats, &c. I do hope, now that attention has been given to this subject, that this basin will not be overlooked. It is an obstruction to the view and to any improvement of the walks near it, and is, with its hideous fountain, as ugly a thing as can be well conceived. Nothing but the greatest necessity ought to excuse its further remaining.—A PARK STROLLER.

ONSLOW BAPTIST CHAPEL, BROMPTON.—A site having been obtained near Queen's-elms, part of the land belonging to the Hospital for Consumption, the first stone of a chapel for the Baptists was laid on the 6th inst. The edifice will be in the Pointed style of architecture. The extreme length will be 85 feet, breadth 65 feet, height 52 feet, and two towers, each upwards of 90 feet high. The building is to be faced with Kentish rag, relieved with Bath stone dressings.

BARN-FLOORS.—Mr. Greaves, of Matlock Bath, Derbyshire, has favoured the Council of the Royal Agricultural Society with the following information respecting barn-floors, in reference to an inquiry made by Colonel Chapman, "whether any cheaper and equally durable material had been met with, as a substitute for barn-floors, than the old-fashioned oak flooring, for which an estimate had been sent in to him for 40*l.*" :— "In reference to your inquiries relative to the laying of barn-floors, I strongly recommend asphalte in preference to wood, for many reasons, a few of which may be mentioned; as, first, the imperviousness of asphalte to moisture; second, the exclusion it occasions to vermin; and, third, the preservation of the grain in a sweet state from the dryness in which it is kept. I get the asphalte in blocks, and having set up an old boiler near the place, I mix gravel with it while hot, and run out the mixture on the surface required to the thickness of about 2 inches. In a few hours the asphalte floor will bear any weight, and it will be found not only better but cheaper than wood."

DOVER WATER WORKS.—Strong statements have reached us as to the manner in which the water pipes have been laid at Dover, and the consequent waste of water. It seems too serious a case, however, to meddle with on *ex parte* evidence.

TENDERS

For warehouse in Bury-street, St. Mary Axe. Mr. T. C. Clarke, architect. Quantities supplied by Mr. Barrett:—

I'Anson	£2,376 0 0
W. Lawrence and Sons	2,180 0 0
Browne and Co.	2,147 0 0
Ashby and Sons	2,108 0 0
Wilson	2,091 0 0
Westacott	2,078 0 0
Pollock & MacLennan (accepted)	2,076 0 0

For vicarage-house, Gazeley, Suffolk. Mr. William Rogers, architect:—

Clarke (Newmarket)	£1,856 0 0
Grainger (Saffron Waldon)	1,848 0 0
Gammon (London)	1,757 0 0
Freeman (Ely)	1,746 0 0
Rednall (Woolpit)	1,745 0 0
Bullock (Cambridge)	1,692 0 0
Taylor and Buckley (London) (accepted)	1,670 0 0

For two chapels, including inside fittings, &c.; two lodges, two sets of entrance-gates, dwarf wall, and iron railing, at Mansfield Cemetery. Messrs. Pritchett and Sons, architects:—

Valance	£1,850 0 0
Frisby	1,710 0 0
Lindley	1,488 0 0
Dennett (accepted)	1,467 0 0

For the erection of a cottage residence, for Mr. R. W. Boyle, Stratford, Essex. Mr. Horace A. Alexander, architect. Quantities supplied:—

Perry	£1,224 0 0
Hill	1,217 0 0
Hedges	1,195 0 0
Pilkington	1,127 0 0
Morter	1,097 0 0
Rivett (accepted)	1,023 0 0

For Chorley Cemetery:—

	Saville.	Banks.	Todd.	Chester.
	£. s. d	£. s. d.	£. s.	£. d.
Entrance-Lodge..	447 7 9	384 6 11	473 9	397 0
Episcopal Chapel	345 14 11	306 14 6	412 0	316 0
Roman Catholic Chapel	342 4 4	247 1 2	373 12	265 0
Dissenters' ditto..	311 17 1	255 0 5	315 4	270 0
Totals.....	1447 4 1	1193 3 0	1574 5	1248 0

Mr. Banks's tender for the three chapels, accepted. The Commissioners are wishful to reduce the cost of the entrance-lodge, and, intending to alter the plan, did not let this building. The Episcopal and Roman Catholic Chapels are, each 32 feet by 18 feet on plan, inside measure; with vestries, 10 feet by 10 feet, and bell turrets. The Dissenters' Chapel is octagon on plan, 24 feet, inside measure.

For three chapels and lodge, at Salford Cemetery. Messrs. Pritchett and Sons, architects:—

	Masonry.	Other works.	Whole.
	£1,904	£ ...	£ ...
Ellis and Hinchliffe	1,847	598	2,446
Warburton	2,000	828	2,828
Mitchell	...	...	2,694
Foggett	...	...	2,574
Burnbill	...	...	2,560
Tully	1,810	...	...
Frisby	1,728	...	2,380
Crowther (accepted)	...	652	
Dallow (accepted)			

TO CORRESPONDENTS.

"*To Colour Mortar.*"—Will any of your readers who have had practical experience in the matter, please to say what they have found best for making black mortar, for setting red bricks with, or for painting the same, to be durable, and to stand its colour.

"Messrs. R. C. and Co." — "H. C."—"A. B. S."—"J. P."—"W. J. C."—"E. P."—"A. B."—"P. T."—"D. B." (send particulars, please)—"R. C." Durham.—"J. P. K."—"M."—"A. B."—"W. Y."—"J. H. and Son" (shall be remembered).—"L. B."—"F. W."—"W. M."—"P. N. L." (thanks).—"J. F. F." (declined with thanks). — "C. E." (let us know). — "Young Beginner" (Cobbler's "heel-ball," some thin paper, and steady rubbing. Lay the paper smoothly upon the brass, and rub the face of the paper with the heel-ball).—"Mr. R."—"H. B."—"E. C."—"J. W. P."—"F. M."—"M. J. L."—"S. S. M."—"G. S."—"Sir R. B."—"G. A. W."—"Perseverantia."—"R. W. W."—"H. C."—"Messrs. P."—"Rising Sun."—"A Subscriber."—"Jersey."—"E. W. T."—"N. and Z."—"R. R. R."—"H. McC."—"B. S."

ERRATUM.—*Proposed Gigantic Tunnels, &c.*—By the accidental transposition of the decimal point, page 266, *ante*, the length of the Box Tunnel was called 313,372 yards = 177 miles, instead of 3,133·32 yards, or less than two miles in length.

NOTICE. — All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

NOTE.—Various statements having reached us as to the difficulty of procuring copies of the *Builder* in some parts of the kingdom—more particularly in Ireland,—it is proposed to parties desiring to subscribe, that on the transmission of a post-office order, or postage stamps, addressed "Office of the *Builder*, No. 1, York-street, Covent-garden, London," the *Builder* will be forwarded to them on the day of publication.

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